

Early Childhood Research and Education:  
An Inter-theoretical Focus 5

Claire McLachlan  
Tara McLaughlin  
Sue Cherrington  
Karyn Aspden *Editors*

# Assessment and Data Systems in Early Childhood Settings

Theory and Practice

 Springer

# **Early Childhood Research and Education: An Inter-theoretical Focus**

Volume 5

## **Series Editors**

Joseph Agbenyega, Peninsula Campus, Monash University Peninsula Campus, Frankston, Australia

Marie Hammer, Faculty of Education, Peninsula Campus, Monash University, Frankston, VIC, Australia

Nikolai Veresov, Faculty of Education, Monash University, Frankston, Australia

This series addresses inter-disciplinary critical components in early childhood education such as: Relationships: Movements/Transitions; Community and contexts; Leadership; Ethics are driven by a range of theories.

It brings depth and breadth to the application of different theories to these components both in the research and its practical applications in early childhood education. In-depth discussion of theoretical lenses and their application to research and practice provides insights into the complexities and dynamics of Early Childhood education and practice.

This series is designed to explore the application of a range of theories to open up and analyse sets of data. Each volume will explore multiple age periods of early childhood and will interrogate common data sets. The notion of theoretical coherence as a methodological principle will underpin the approach across each of the volumes.


Claire McLachlan · Tara McLaughlin ·  
Sue Cherrington · Karyn Aspden  
Editors


# Assessment and Data Systems in Early Childhood Settings

Theory and Practice


 Springer

*Editors*

Claire McLachlan   
Institute of Education, Arts and Community  
Federation University  
Ballarat, VIC, Australia

Tara McLaughlin   
Institute of Education  
Massey University  
Palmerston North, New Zealand

Sue Cherrington   
School of Education  
Victoria University of Wellington  
Wellington, New Zealand

Karyn Aspden   
Institute of Education  
Massey University  
Palmerston North, New Zealand

ISSN 2946-6091

ISSN 2946-6105 (electronic)

Early Childhood Research and Education: An Inter-theoretical Focus

ISBN 978-981-19-5958-5

ISBN 978-981-19-5959-2 (eBook)

<https://doi.org/10.1007/978-981-19-5959-2>

© The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2022

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

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 Singapore Pte Ltd.

The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721, Singapore

# Acknowledgements

The editors would like to sincerely thank the authors of this volume for their fabulous contributions to this work. As editors, we put out a call for expressions of interest to people who we thought might be working in this area of early years assessment and we were delighted with the response. This is a collection that will be of great support to teachers, teacher educators and to researchers as they consider how to provide support to pre-service and in-service teachers to feel confident and competent in the use of a range of data systems for assessment of young children.

The work of this volume would not be possible without the support of funding bodies, centres, primary schools, principals, teachers, families, and children who all agreed to participation in the research. The generous cooperation and collaboration that is evident in all the studies is both needed and enormously valued. It is so important that research into this important topic is enabled to continue.

Finally, as first editor, I want to thank the editorial team. I have been greatly blessed to work collaboratively with Tara McLaughlin, Sue Cherrington and Karyn Aspden on research and joint publications. This volume has been a new and exciting adventure together, and I am enormously grateful for the time that they have given to both editing chapters and liaising with authors and to brainstorming how to frame the themes arising from the volume. A sincere thanks to you all for your collaboration, your insights, and your friendship.

# Contents

## Part I Introduction

- 1 Using Data Systems to Inform Early Childhood Practice** ..... 3  
Claire McLachlan, Tara McLaughlin, Sue Cherrington,  
and Karyn Aspden

## Part II Data Systems in Early Childhood Practice

- 2 Revisiting the Roles of Teachers as Assessors of Children’s  
Progress: Exploration of Assessment Practices, Trends,  
and Influences Over Time** ..... 29  
Claire McLachlan and Tara McLaughlin
- 3 The Collection and Use of Assessment Information in Early  
Childhood Settings** ..... 61  
Monica Cameron

## Part III Different Approaches to Documentation

- 4 Collective Imaginary Situation as a Site of Diagnostic  
Assessment: A Cultural-Historical Analysis of Children’s  
Emerging Science Motive Orientations in a Conceptual  
PlayWorld** ..... 81  
Prabhat Rai, Marilyn Fleer, and Glykeria Fragkiadaki
- 5 E-portfolios to Capture and Share Moments of Learning** ..... 105  
Lisa Kervin, Sue Bennett, and Cathrine Neilsen-Hewett
- 6 Tools and Time for Noticing in Early Childhood Pedagogy  
Outdoors** ..... 125  
Anne-Marie Morrissey, Llewellyn Wishart, Natalie Robertson,  
Deb Moore, and Virginia Kinnear

**7 Documentation as a Tool for Changing Practices in Early Childhood Education** ..... 149  
 Kristín Karlsdóttir and Johanna Einarsdóttir

**Part IV Children and Data Systems**

**8 Using Data Collection to Better Understand Students in Early Primary Physical Education** ..... 177  
 Cameron Van der Smee and Ben Williams

**9 Assessing Young Children’s Emotional Well-Being: Enacting a Strength-Based Approach in Early Childhood Education** ..... 201  
 Sue Emmett

**10 Children’s Self-assessment Plans to Inform Teaching and Provide Summative Data** ..... 223  
 Anna Fletcher

**11 Child-Voiced Assessment for Understanding Children’s Learning and Transforming Pedagogic Practices** ..... 243  
 Pauline Harris

**12 Listening to Children’s Personal Reflections for Understanding Their Learning Journey** ..... 265  
 Elizabeth Rouse

**Part V Enhancing Teacher Practice**

**13 Data, Knowledge, Action: The Uses of Data Systems as Auxiliary Tools to Aid Teachers’ Thinking About Children’s Curriculum Experiences and Teacher Practices** ..... 287  
 Sue Cherrington, Tara McLaughlin, Karyn Aspden, Lynda Hunt, and Claire McLachlan

**14 Developing Teacher-Researchers Capacity to Support the Use of New Data Systems** ..... 309  
 Karyn Aspden, Lynda Hunt, Tara McLaughlin, and Sue Cherrington

**15 Looking Towards the Future Use of Assessment and Data Systems in Early Years Settings** ..... 331  
 Claire McLachlan, Tara McLaughlin, Sue Cherrington, and Karyn Aspden



# Editors and Contributors

## About the Editors

**Claire McLachlan** is Executive Dean of the Institute of Education, Arts and Community at Federation University Australia. This role involves leadership of the Institute across six regional campuses in Victoria. Prior to this appointment, she was Dean of the School of Education at Federation, Head of School for Te Hononga, the School of Curriculum and Pedagogy in the Faculty of Education, University of Waikato, and Professor of Childhood Education at Massey University, where she taught courses on languages, literacies, cognition, pedagogy, assessment and evaluation. She has also supervised over 60 HDR students, including ten doctoral completions to date. She has published 9 books, has over 200 research outputs, and has received over \$6 million in research and consultancy funding. Her primary field of research is early childhood education, and her platform of research is focused on literacy, physical activity, curriculum, pedagogy, assessment and evaluation. In addition to personal research, she has undertaken wide ranging evaluation research for three government Ministries in New Zealand; and internationally, she has provided consultancy for the Semarang State University (UNNES) in Central Java, Indonesia and the New Zealand Ministry of Foreign Affairs for education in Tokelau. She is currently President of the Victorian Council of Deans of Education, the Victorian representative on the Australian Council of Deans of Education, a member of the UNESCO-IBE Early Reading Panel, the New Zealand Ministry of Education Early Childhood Research Policy Forum and ECE Sector Reference Group, and the Australian Centre for Policy Development's intergovernmental Council for Early Childhood Development. e-mail: [c.mclachlan@federation.edu.au](mailto:c.mclachlan@federation.edu.au)

**Dr. Tara McLaughlin** is a Senior Lecturer in Early Years Education and the founder and director of the Early Years Research Laboratory in the Institute of Education at Massey University. Prior to this appointment, she was a Research Scientist at the University of Florida in the Anita Zucker Center for Excellence in Early Childhood Studies. As a teacher, teacher educator and researcher in Early Years, she is committed

to supporting learning environments that promote diverse and equitable opportunities for all children and families. She maintains an active research programme in range of topics related to early learning supports and services for young children, including children with disabilities, their families, and the teachers and specialists who serve them. Her research focuses on inclusive high-quality early intervention and early childhood education. Key focus areas include exploring (a) evidence-based, intentional and social-emotional teaching practices; (b) assessment and data-informed teaching; and (c) innovative professional learning and development. Her research uses an eclectic mix of research methods including statistical techniques and a focus on measurement quality in educational research. She is currently the lead investigator in the data, knowledge, action projects, funded by the Teacher Led Innovation Fund (TLIF) and Teaching, Learning, Research Initiative (TLRI). e-mail: [T.W.McLaughlin@massey.ac.nz](mailto:T.W.McLaughlin@massey.ac.nz)

**Sue Cherrington** is an Associate Professor in the School of Education and is Director of the Institute for Early Childhood Studies at Victoria University of Wellington. She has an extensive background in early childhood education, as both a kindergarten teacher and in early childhood teacher education. Her overarching research focus is on professional and pedagogical practices in ECE. Within this broad focus, her research concentrates on EC teacher thinking and reflection, including the use of video to support collective thinking and reflection; teacher professional learning and development, particularly through professional learning communities (PLC) and the evaluation of professional development programmes for EC practitioners; teachers' ethical and professional experiences and practices; teachers' professional and pedagogical responses to working with diverse children and families; and investigation of the use of innovative data collection tools for use by teachers in ECE settings. She has developed methodological expertise in the use of video stimulated recall methods within educational settings. e-mail: [sue.cherrington@vuw.ac.nz](mailto:sue.cherrington@vuw.ac.nz)

**Karyn Aspden** is a Senior Lecturer in Early Years Education in the Institute of Education at Massey University. She began her career as a teacher and leader in a range of early childhood services, before moving into initial teacher education. She is Programme Coordinator of the Graduate Diploma of Teaching (ECE). Her teaching areas include leadership in early childhood education, studies of infants and toddlers, professional practice and early intervention. She is passionate about supporting both student teachers and experienced teachers to enhance their professional skills and knowledge, to be effective, informed and intentional teachers of young children. Her research interests include practicum, effective teaching practice, early intervention and infant and toddler pedagogy. The importance of meaningful and responsive relationships is the thread that weaves through each of these areas. e-mail: [k.m.aspden@massey.ac.nz](mailto:k.m.aspden@massey.ac.nz)

## Contributors

**Aspden Karyn** Institute of Education, Massey University, Palmerston North, New Zealand;

Institute of Education, Arts and Community, Federation University Australia, Ballarat, VIC, Australia

**Bennett Sue** Faculty of Arts, Social Sciences and Humanities, University of Wollongong, Wollongong, NSW, Australia

**Cameron Monica** Te Rito Maioha/Early Childhood New Zealand, Wellington, New Zealand

**Cherrington Sue** School of Education, Victoria University of Wellington, Wellington, New Zealand

**Einarsdóttir Johanna** School of Education, University of Iceland, Reykjavik, Iceland

**Emmett Sue** Institute of Education, Arts and Community, Federation University Australia, Berwick, VIC, Australia

**Fleer Marilyn** Faculty of Education, Monash University, Melbourne, VIC, Australia

**Fletcher Anna** Institute of Education, Arts and Community, Federation University Australia, Churchill, VIC, Australia

**Fragkiadaki Glykeria** Faculty of Education, Monash University, Melbourne, VIC, Australia

**Harris Pauline** Chair, Early Childhood (Research), University of South Australia, Adelaide, SA, Australia

**Hunt Lynda** Formerly West End Kindergarten, Ruahine Kindergarten Association, Palmerston North, New Zealand

**Karlsdóttir Kristín** School of Education, University of Iceland, Reykjavik, Iceland

**Kervin Lisa** Early Start Research/School of Education, University of Wollongong, Wollongong, NSW, Australia

**Kinnear Virginia** School of Education, Deakin University, Geelong, Australia

**McLachlan Claire** Institute of Education, Arts and Community, Federation University Australia, Ballarat, VIC, Australia

**McLaughlin Tara** Institute of Education, Massey University, Palmerston North, New Zealand

**Moore Deb** School of Education, Deakin University, Geelong, VIC, Australia

**Morrissey Anne-Marie** School of Education, Deakin University, Geelong, VIC, Australia

**Neilsen-Hewett Cathrine** Early Start Research/School of Education, University of Wollongong, Wollongong, NSW, Australia

**Rai Prabhat** Faculty of Education, Monash University, Melbourne, VIC, Australia

**Robertson Natalie** School of Education, Deakin University, Geelong, VIC, Australia

**Rouse Elizabeth** School of Education, Deakin University, Burwood, VIC, Australia

**Van der Smee Cameron** Institute of Education, Arts and Community, Federation University Australia, Berwick, VIC, Australia

**Williams Ben** Health and Physical Education, School of Education and Professional Studies, Griffith University, Gold Coast, QLD, Australia

**Wishart Llewellyn** School of Education, Deakin University, Geelong, VIC, Australia

# List of Figures

Fig. 4.1	Figure representing the assessment practice model in the Conceptual PlayWorld .....	101
Fig. 5.1	Capture of group activity for “Child Protection Week” (Service A) .....	112
Fig. 5.2	Capture of individual activity (Service B) .....	114
Fig. 5.3	Catching rain (Service A) .....	116
Fig. 8.1	Aaron blocks Adele’s path .....	184
Fig. 8.2	Aaron and Ric attack the ball in Adele’s hands .....	185
Fig. 8.3	Llewyn fakes a pass to trick Jenny .....	186
Fig. 8.4	Llewyn’s playground map .....	188
Fig. 8.5	Adele’s map .....	190
Fig. 8.6	Llewyn playing football .....	192
Fig. 8.7	Adele riding her bike .....	194
Fig. 8.8	Adele riding her roller blades .....	195
Fig. 9.1	Guidance Model for Emotional Development and Learning ....	210
Fig. 9.2	Findings for Lucy and Felicity at two observation time intervals using the attachment-focused practice and behaviour: system of categorisation for the naturalistic observations for educator (Emmett, 2011) .....	214
Fig. 9.3	Findings for Lucy and Felicity at two observation time intervals using the attachment-focused practice and behaviour: system of categorisation for the naturalistic observations for child (Emmett, 2011) .....	215
Fig. 10.1	The centre pages of the planning template with forethought prompts .....	231
Fig. 10.2	The self-reflection phase of the self-assessment cycle .....	232
Fig. 11.1	Eddie’s learning story .....	249
Fig. 11.2	Natasha’s learning story .....	250
Fig. 11.3	Ethan’s learning story .....	251
Fig. 11.4	Dialogic encounter with Kuini as she makes roti bread and a book .....	253

Fig. 11.5	Taniela's learning story .....	254
Fig. 13.1	Pre- and post-project surveys: confidence in inquiry processes .....	295

# List of Tables

Table 2.1	Dimensions of quality assessment in ECE	37
Table 2.2	Selected history of curriculum, assessment, evaluation, and drivers of early childhood practice	38
Table 3.1	Percentage of phase one survey respondents reporting frequencies of use of assessment methods	66
Table 3.2	Percentage of respondents and interviewees indicating ways parents and whānau are involved in the assessment process in the last four weeks	67
Table 3.3	Respondents' ranking of the main purposes of assessment	69
Table 3.4	Percentage of respondents indicating how regularly they used assessment information for the following purposes	70
Table 4.1	Everyday activity record of Lexi	97
Table 6.1	Sensing–feeling–action cycle	137
Table 6.2	Relationship awareness	137
Table 9.1	Observation descriptor definitions for the attachment-focused practice and behaviour: system of categorisation for naturalistic observations for educator	213
Table 9.2	Observation descriptor definitions for the attachment-focused practice: system of categorisation for naturalistic observations for child	213
Table 10.1	Self-assessment as a three-phase process (Fletcher, 2018a adapted from Zimmerman, 2011)	227
Table 10.2	Codes and themes from the data analysis (inclusive of data from years 2, 4 and 6)	230
Table 10.3	Children's intended audiences, as indicated by their planning templates	233
Table 10.4	Students' choice of text, as indicated on their planning template	237
Table 11.1	Principles of dialogic encounters (Harris et al., 2020) and their applications to child-voiced assessment	247

Table 13.1 Main ECE service types in New Zealand ..... 289  
Table 13.2 Data, knowledge, action projects ..... 292  
Table 14.1 TLIF project data systems ..... 316



**Part I**  
**Introduction**

# Chapter 1

## Using Data Systems to Inform Early Childhood Practice



Claire McLachlan, Tara McLaughlin, Sue Cherrington, and Karyn Aspden

**Abstract** This volume presents an international collection of research which has examined ways in which teachers and researchers have researched effective assessment of young children (birth to eight years) and have revised ways in which they assess children's learning and development and use the knowledge gained for curriculum planning. The tensions and challenges associated with assessment of young children are explored. The focus of this volume therefore is observation, assessment, evaluation and uses of data systems in early childhood and junior primary settings. The authors in this volume have explored what effective, socially, and culturally appropriate assessment of young children can involve, using a range of data systems. The chapter provides an overview of why the research these authors have been doing is needed now and the contributions that the collective body of research makes to understandings of early years development and education. The chapters explore issues in assessment of young children, the uses of data systems in early years education and the implications for teachers' practices.

### 1.1 Introduction to This Volume

It is with great pleasure that we introduce this volume of research on the use of data systems in early childhood settings. The subject of this volume is observation,

---

C. McLachlan (✉) · K. Aspden  
Institute of Education, Arts and Community, Federation University Australia, Ballarat, VIC,  
Australia  
e-mail: [c.mclachlan@federation.edu.au](mailto:c.mclachlan@federation.edu.au)

K. Aspden  
e-mail: [k.m.aspden@massey.ac.nz](mailto:k.m.aspden@massey.ac.nz)

T. McLaughlin · K. Aspden  
Institute of Education, Massey University, Palmerston North, New Zealand  
e-mail: [T.W.McLaughlin@massey.ac.nz](mailto:T.W.McLaughlin@massey.ac.nz)

S. Cherrington  
School of Education, Victoria University of Wellington, Wellington, New Zealand  
e-mail: [sue.cherrington@vuw.ac.nz](mailto:sue.cherrington@vuw.ac.nz)

assessment, evaluation, and uses of data systems in early childhood settings (birth to 8 years). Within this volume we take a broad view of data, such that data can be information in any form that is gained for a known purpose using a known process. The volume represents an international collection of research which has examined ways in which teachers and researchers have researched what constitutes effective assessment, revised ways in which they assess children's learning and development, and use the knowledge gained for curriculum planning and teaching practice. The authors of the chapters in this volume have explored what effective, socially, and culturally appropriate assessment of young children can involve, using a range of data systems that produce meaningful data to inform learning. This chapter provides an overview of why the research these authors present is needed and the contributions that the collective body of research makes to understandings of early childhood development and education. The chapters in the volume offer insights into contemporary research on how teachers and children are engaging with data systems as part of effective assessment.

## **1.2 Why Do We Need to Think About Data Systems in Early Childhood?**

Although the focus of this volume is on how the use of data systems can enhance the quality of early childhood education and as a result enhance children's learning and development, internationally, the assessment of young children is an increasingly important topic, as many governments are concerned about their investment in early childhood education and want evidence on the outcomes of government investment (OECD, 2020). Countries are increasingly focusing on early years policies as a means of raising overall educational performance and mitigating disadvantage. Many countries have increased early childhood education participation rates and have increased their overall investments in early years policies as part of their social and economic agenda (Phair, 2021). For example, the National Head Start program in the United States of America (USA) is funded to ensure children growing up in poverty receive high quality early childhood education and are prepared to start school; the policy initiative developed to 'close the gap' on economic disadvantage. There has been a consequential focus on validating scientifically based assessment that will demonstrate requisite Head Start programme outcomes have been achieved and children are making progress across the range of developmental domains (Akers et al., 2015; Barghaus & Fantuzzo, 2014; Zigler & Styfco, 2010). Bradbury (2015) argues that such use of formal assessment systems with young children is not universally accepted internationally but use in the United Kingdom (UK) with five-year-olds is consistent with an emphasis on accountability and the 'high stakes' assessment systems used in compulsory schooling. Assessment of all five-year-olds in the UK to see if they are at the emerging, expected, or exceeding level against the 17 learning goals of the Foundation Stage Curriculum (Standards & Testing Agency, 2020) is a

further example of how a government can assess their return on investment. Bradbury (2015) further argues that such measures of attainment must be used with awareness of the complexity of the relationships between assessment and inequality, particularly in relation to teacher judgements, which are a subjective assessment. The focus on psychometric or standards-based assessment methods is arguably not as strong in other developed countries as in the USA or UK, but there are signs that such a focus is increasing internationally. Recent work by the OECD (Phair, 2015, 2021) on designing an outcomes assessment tool that could be used internationally to provide comparative data is evidence of this focus. As Phair (2021, p. 15) argues,

...governments have increasingly seen ECEC as a means to support children's early development and mitigate inequity across different groups within society. Thus, policy makers have made greater investments in early childhood programmes as a means to build children's cognitive and social-emotional skills. Some of these efforts have especially targeted children from disadvantaged or immigrant backgrounds, to combat the linguistic and economic disadvantages that could otherwise hinder their development and integration. As such, ECEC is regarded by many as a critical policy measure that can promote equity, support holistic and continuous development and improve children's wellbeing.

Assessment in early childhood education thus has two major foci. First, it is something that governments are interested in, as a measure of the success of their economic investment in young children. This focus on outcome measures of early childhood is hotly contested but has led the OECD in particular to investigate which types of measures of young children's learning and development would satisfy both governments and the education community (Phair, 2015, 2021). The second focus resides within the larger debates around educational quality. In this focus, assessment is about finding out whether the curriculum and pedagogical opportunities offered to young children are having a positive influence on learning and development (Akers et al., 2015; McLachlan, 2017; Snow & van Hemel, 2008). In this focus, assessment helps educators become aware of children's strengths and areas of their learning and development in which they may require further support and nurturing. The Gordon Commission (2012) highlighted the tensions between traditional notions and practices in assessment, teaching and learning, and emerging thought stemming from science, technology, and scientific imagination. The Gordon Commission report helpfully defines the difference between assessment of educational outcomes for accountability and evaluation; and assessment for teaching and learning for use in diagnosis and intervention. The report recognises that data obtained for each purpose should be valid and fair and that the assessment methods and processes should be fit for purpose.

In addition, as a relatively new field of study, early childhood teachers and researchers have had to consider whether the methods of assessment that have been used in the compulsory education sector are relevant or appropriate to assessment of children prior to school entry. Apart from the previously mentioned movements in the USA and the UK to use standardised assessment of young children, there has been a movement away from standardised approaches to assessing children

to understanding children's learning, development, and growth within the educational contexts in which they participate. This approach is in part because globalised communities are characterised by variations in socioeconomic, cultural, and linguistic diversity (Casbergue, 2011; Espinosa, 2012). It can be problematic to use assessments that might only be appropriate for measuring the learning and development of children who have cultural experiences that match what is measured on the test. Contemporary approaches to assessment, primarily drawing on ecological and sociocultural theorising, are particularly focused on understanding the child in context (McLachlan, 2017). These approaches have been informed by sociocultural theory and associated understandings of how children learn and grow, including the importance of participation in social and cultural contexts on learning (Vygotsky, 1978, 1986). Examining issues of the social situation of development and the zone of proximal development in assessment is particularly important when the age range includes infants, toddlers, and young children (Chaiklin, 2003).

Thus, there is a tension between these two foci of assessment. On one hand, the early childhood system needs to be able to provide summative evidence that early childhood services are making a difference to children's learning and development outcomes that will be of relevance to key stakeholders, such as government agencies. On the other hand, teachers need to be able to conduct assessment that is context specific, allows insights into the strengths, needs, interests, and preferences of children, and provides formative information about the children in their care. Although some writing (cf. Moss et al., 2016; Pence, 2016) suggests that the former focus on outcomes, reflected in the development of the '*International Early Learning and Child Wellbeing Study*' (Phair, 2015, 2021) is a 'baby PISA' or PISA for five-year-olds is simply wrong, this volume highlights that teachers and researchers are finding innovative solutions using data systems that speak to a range of audiences. Bradbury (2019) argues that there is increase 'datafication' and 'schoolification' in the UK, stemming from an increased focus on formal assessment of young children and assessment of outcomes on school entry, but the issue is not the collection of data per se, but the poor use of it, that is of concern.

Rather than simply adopting a stance that all uses of data are bad, this volume shows that teachers can learn a great deal about their students and their learning through gathering a range of data, which is sometimes at odds with what they thought they knew about children. As Timperley (2005) has argued, one of the ways in which data can be powerful in creating change is the possibility that they may be discrepant with previous beliefs and create surprise, thus challenging those beliefs. As she states, "It is under these circumstances that the data can be particularly powerful for professional learning because what they show can challenge deeply held beliefs about students, their potential for learning, and the impact of teaching" (p. 6). It is in this spirit that this volume is presented, as a way forward in which teachers use data systems to support their understandings of infants, toddlers and young children in early years services and to enhance opportunities for teaching and learning.

### 1.3 The Importance of Differentiated Approaches to Assessment

Curricula differ in their orientation: they are either focused on student performance, usually against predetermined standards; or they focus on children's achievement of competence (Bernstein, 1996; McLachlan et al., 2018). The curriculum model and underpinning theoretical framework employed will have a consequential effect on the type of assessment data required by regulatory bodies and/or valued by concerned parties such as owners, managers, community groups and families. It is widely accepted that a variety of assessment measures should be employed to identify "what each child brings to the interaction" (Bowman et al., 2001, p. 234). In order for children to have their learning needs recognised, culturally and linguistically inclusive assessment, teaching, and curriculum practices are needed (Bowman et al., 2001; Espinosa, 2005, 2012; Puckett & Black, 2008). One way of ensuring this occurs is for teachers to identify what each child brings to the learning context and make curriculum decisions aimed at fostering further learning and development.

Many teachers use observation as a primary method for understanding where children are on a continuum of learning and development. However, Edwards (2009) states some models of observation for young children are based on deficit notions of child development, in which teachers make comparisons of individual children against universal stage theories of child development. Furthermore, recent 'post developmental' thinking about childhood, drawing on sociology, poststructuralism, and postmodernism, challenges the idea that children's learning occurs in separate domains and occurs at particular ages and stages (Nolan & Kilderry, 2010), which is argued to be particularly problematic for understanding development of children from diverse cultures. To understand the complexities of children's learning, teachers need to do regular observation so they can identify children's strengths, interests, preferences, and needs; assessment of learning difficulty being a child's right (McLachlan et al., 2013) in order to gain access to further support. Teachers can identify, through regular observation and reflection, key areas in which they need to support children to learn and develop, but this is dependent on teachers having the time to do regular observation. Rogoff (2003) proposed that observations and interpretations can be framed through three lenses:

- Personal (the child on its own);
- Interpersonal (the child in relation to others); and
- Contextual and institutional (features of the environment in which the child is learning).

It can be useful to frame observations using a three-dimensional or multifaceted approach, as this yields greater information about the child in context (McLachlan et al., 2018). Casbergue (2011) calls this 'situated assessment' in which teachers capture learning in the context of everyday activities. Items to observe include:

- The physical setting—environment and organisation.
- The human setting—the people and their composition.

- The interactional setting—types of interaction taking place.
- The programme setting—resources, organisation, pedagogic styles, curriculum.

Assessment of children's learning and development in such a way yields richer information that can be used for individual assessment and curriculum planning.

As previously argued (McLachlan et al., 2013) teachers may need to use a broader conception of assessment with infants, toddlers, and young children than simply observation as they work with children in order to fully support learning. The reason, as Hipkins (2007) has argued, is that learning is more like a roadmap than necessarily orderly and sequential and therefore teachers need be alert to children's diverse learning pathways and journeys. However, teachers need to know of the typical progressions in learning and development, as this can help them to identify when children are not progressing typically and may need further support. Within this view of assessment, the concept of 'need' is synonymous with 'right' for the very young; children have the right to have their learning needs assessed or to have their learning strengths extended (Bagnato, 2007; Bagnato et al., 2014; Snow & van Hemel, 2008). Building on the United Nations (1989) Convention on the Rights of the Child (UNCROC), assessment is one of the ways in which children can have their educational and developmental needs and rights recognised. Ongoing assessment processes should therefore document the different pathways that children take to reach the desired curriculum outcomes and identify when curriculum and pedagogies need to be changed to better support opportunities for learning.

Ensuring that assessment is fair and meaningful is a core aspect of effective assessment of young children (Bagnato, 2007; Bagnato et al., 2014). The effectiveness of assessment is often considered in terms of whether or not the information gathered is fair, valid, and reliable (Absolum, 2006) and to achieve this, multiple approaches to assessment are required. The implementation of multiple assessment strategies provides teachers with information needed to develop a clear understanding of the strengths and needs that children bring with them to the learning context (Wortham, 2008; Puckett & Black, 2008). Teachers need to use a range of assessment data for curriculum planning and evaluation of the effectiveness of the curriculum offered. For assessment to be used in this way it is important for teachers to identify the intended purpose of the assessment and select an appropriate assessment tool. Once assessment strategies are implemented teachers should engage in an ongoing cycle aimed at gathering, analysing and using information to support children's learning and development, and strengthen curriculum (Arthur et al., 2012; McLachlan et al., 2018). Evaluation of the effectiveness of curriculum needs to include analysis of how effective the assessment practices are for supporting children's learning (Education Review Office, 2013; Australian Curriculum and Reporting Authority, 2011).

## 1.4 A Cultural-Historical Framework for Assessment

Current research on teaching, learning, and assessment with young children shows that learning is more than the individual construction of knowledge. Vygotsky (1978, 1986) argued that it is only through interaction with others in a society that children can internalise the symbols and tools of their culture. Furthermore, Vygotsky argued that static assessment measures, such as intelligence tests, were limited because such measures only capture “the level of the child’s mental development at a particular time” (Vygotsky, 1986, p. 187). He proposed that a measurement of a child’s actual developmental is limited in its potential to describe a child’s skills because it only represents the skills a child has mastered, rather than those that are in the process of maturing. Using the notion of the Zone of Proximal Development, Vygotsky (1978) argued that it is possible to learn more about a child’s potential for learning by observing what they can do in collaboration with a more experienced adult or peer. To determine a child’s zone of proximal development, or learning potential, a dynamic assessment paradigm is required in which the goal is to determine those skills that are not yet mastered but are in a state of maturation. This process-oriented approach to assessment identifies the width of a child’s zone by determining what level of guidance is needed for a child to perform independently. This double layered approach to assessment helps to determine the child’s independent skills as well as their potential for learning with assistance (Vygotsky, 1978). Vygotsky’s concept of the Zone of Proximal Development (ZPD) therefore provides the theoretical framing and operational space for the notion of dynamic assessment (Poehner & Lantolf, 2005). Using cultural-historical theory as a framework for assessment, it can be argued that a child’s ability as indicated by their actual performance on any task does not represent a full picture of what they can do in future. As Poehner and Lantolf (2005) state,

In proposing the ZPD Vygotsky ... argued that an individual’s actual level of development as determined by independent performance “not only does not cover the whole picture of development, but very frequently encompasses only an insignificant part of it” (Vygotsky, 1998, p. 200). He insisted that responsiveness to mediation is indispensable for understanding cognitive ability because it provides insight into the person’s future development. That is, what the individual is able to do one day with mediation, he or she is able to do tomorrow alone. (p. 236)

A dynamic assessment approach therefore recognises that learning for young children occurs in the context of social and cultural participation and developing understandings are enacted in a social context (Jordan, 2010). Consequently, it follows that assessment practices must take into consideration the learning process and show transformation of understanding rather than an end point (Fleer & Robbins, 2006).

There are three core constructs, stemming from Vygotsky’s theory (1978, 1986) that are useful to include here as part of the framing of this volume on data systems for assessment. These constructs, developed by Vygotsky and two colleagues, Daniel Elkonin and Alexander Zaporozhets, include the following: the cultural-historical theory of development; play as a leading activity during the early years; and the



concept of amplification. Vygotsky's (1978, 1986) developmental theory proposed that during early childhood, cognitive restructuring goes through initial stages as children's use of cultural tools transforms perception and other cognitive processes such as attention, memory, and thinking. In addition, social-emotional capacities are transformed. As these cognitive and social-emotional capacities develop, children make the transition from being 'slaves to the environment' to becoming 'masters of their own behaviour' (Bodrova & Leong, 2015). In Vygotsky's view, one of the accomplishments of early childhood is overcoming impulsive, reactive behaviour that is a "knee-jerk" response to the environment and becoming capable of intentional behaviour. Instead of grabbing a toy that another child has, the intentional child can think about strategies to solve this social problem. Intentional behaviour is thus developed through the use of self-regulatory private speech and through participation in make-believe play, both developing higher mental functions. From Vygotsky's perspective, this view of development calls for a different approach to education and in particular to assessment; an approach that focuses instruction not on the competencies already existing in a child, but on the competencies that are still 'under construction'—the ones that exist in the child's Zone of Proximal Development (ZPD).

Elkonin (2005a, 2005b) similarly viewed childhood as determined by the social-cultural context and the child's engagement in leading activity. He argued that leading activities are interactions that are unique to a specific period of child development and are necessary to bring about the major developmental accomplishments of that period. Consistent with Vygotsky's principle of effective teaching being aimed at the child's ZPD, Elkonin defined the goal of education as promoting developmental accomplishments at each age by supporting the leading activity specific to that age. Elkonin emphasised the importance of play for children's mastery of social interactions, cognitive development, and self-regulation. He identified the essential characteristics that make dramatic play the leading activity of young children as the roles children play, symbolic play actions, interactions with play partners, and the rules that govern the play. Thus, only play with a specific set of features is the kind of dramatic play granted the status of leading activity. Other play-like behaviours (such as building with blocks, materials, and objects) are assigned secondary, albeit important roles (Elkonin, 2005a, 2005b). Thus, Elkonin enriched Vygotsky's idea that play scaffolds a child within his/her ZPD, enabling the preschool child to behave at the level where he is "a head taller than himself" (Vygotsky, 1967, p. 16).

According to Zaporozhets (Zaporozhets & Elkonin, 1971; Zaporozhets, 1986, 1997), early childhood should not be considered as simply a preparation for school. Instead, the early years should be treated as having a value of its own, as making a unique contribution to the overall process of human development (Zaporozhets & Elkonin, 1971). Processes and outcomes of development—cognitive, social, and emotional—specific to preschool years are part of the systemic process of human development and cannot be replaced later. According to Zaporozhets (1986, 1997), development can be amplified (or enriched) if and when education promotes developmental accomplishments specific to a particular age and does not attempt to force the emergence of accomplishments that are the outgrowth of later ages. For infants,

toddlers, and young children, amplification of development involves expanding and enriching the uniquely ‘preschool’ activities, ensuring that in these activities, children are truly functioning at the highest levels of their ZPD. Zaporozhets extended Elkonin’s list of essential activities to include “productive activities” (such as drawing, building, and modelling), “creative activities” (e.g. creation of poems and stories, dramatisation), “practical activities” (such as participating in simple chores), and social interactions with peers and adults. Zaporozhets emphasises that properly designed education does not stifle development of preschool children but instead promotes it, thus, presenting a logical extension of Vygotsky’s principle of instruction leading child development. Teachers can therefore see children’s development in action, as they observe children engaging with other children and teachers in play and can identify through assessment ways in which they can amplify or extend learning.

Viewed in this way, assessment is a collaborative process that seeks to understand children’s learning at home and in the early childhood setting through collaborative partnerships (Brooker, 2010). Cultural-historical approaches to assessment encourage the active involvement of families and other stakeholders in the assessment process (Barron & Darling Hammond, 2008; Fler & Robbins, 2006; Sylva et al., 2010) and view children’s learning and development in relation to the social relationships which are the basis for learning. Such an approach acknowledges that there is no one “right” way for all children to learn (Darling-Hammond & Snyder, 1999; Grisham-Brown et al., 2006) and that learning is contextually specific. Assessment in the early years is therefore increasingly focused on being ‘authentic’ and focused on finding out what is ‘real’ or genuine in a learning situation. Authentic assessment comprises four main principles: finding out what children know and can do; using familiar materials; taking account of children’s learning contexts; and drawing on multiple sources of evidence (Bagnato, 2007; Bagnato et al., 2014; Bodrova & Leong, 2015). Recent research reveals that teachers’ scope of assessment practices may determine what is known about children and their learning and that a range of assessment methods will yield greater and more useful information about how to support children’s learning (Akers et al., 2015; Anthony et al., 2015; Cooper et al., 2014; Karlsdottir & Garoarsdottir, 2010; Nah, 2014).

## 1.5 Issues in Early years Assessment

Despite these contemporary understandings of assessment, there has been some resistance to the notion that teachers can or should assess young children’s learning, with one of the fears being that assessment will encourage push down of academic curriculum into early childhood (Carr & Lee, 2012). Casbergue (2011) counters this fear, arguing “Belief that assessment is the source of multiple ills in classrooms for young children may lead some teachers to eschew calls for documenting children’s learning and development” (p. 16); but she suggests teachers need to understand the purpose of a range of assessment tools and make wise use of them. She further

proposes teachers need to understand the difference between formative and summative assessment. It can also be argued that teachers need to use ipsative assessment for children with specific learning issues (Bagnato, 2007; Bagnato et al., 2014; Hipkins, 2007).

Formative assessment of learning is used as learning is occurring and guides future learning. Formative assessment is defined by Brookhart (2008) as an ongoing process children and teachers engage in when they focus on learning goals, consider where children's learning is in relation to learning goals, and take action to move children's learning closer to the established goals. Summative assessment provides a summary of achievement at the end of a unit or period of learning. Summative assessment is less commonly used with young children because it focuses on what children have learned at the end of an instructional unit and therefore is of limited relevance in play-based programs or with young infants and toddlers (Dunphy, 2010; Ebbeck et al., 2014). Ipsative assessment involves assessing children's learning against their own performance, to determine if progress has been made. In addition, children with special needs may need teachers to use ipsative assessment with authentic, meaningful measures to assess their progress against individual educational or developmental plans (Bagnato, 2007; Bagnato et al., 2014; Hipkins, 2007; Puckett & Black, 2008). In the early childhood context, assessment typically uses all three methods, although they may not be identified as such (McLachlan et al., 2013). Although formative assessment is argued by many to be the only appropriate method of assessment for young children (e.g. Carr & Lee, 2012), the portfolios that are in common use in early childhood are often summative and ipsative in nature, as they may reflect on learning that has already happened and individual progress.

Twenty-first-century developments in assessment research and practice highlight three further distinctions in approaches to assessment of young children. These are assessment of, for, and as learning (Ministry of Education, 2011). It is important to note that approaches to curriculum will shape the relevance of assessment approaches, so there will be variation in the emphases placed on each approach in different countries and regions, depending on the curriculum focus. Assessment of learning focuses on what children can do at a particular point in time and is often linked with summative assessment approaches, such as tests or examinations (Espinosa, 2005, 2012; Fler & Richardson, 2008). Assessment of learning occurs when teachers use evidence of children's learning to make judgements about achievement against goals and standards, such as in the UK Foundation Stage (Standards & Testing Agency, 2020) assessment mentioned previously. Assessment for learning emphasises the use of assessment data to support and plan for future learning (Arthur et al., 2012; Black & William, 1998; Carr & Lee, 2012). Assessment for learning occurs when teachers use inferences about children's progress to inform their teaching. For instance, in New Zealand, which uses a sociocultural approach to early childhood curriculum (Ministry of Education, 1996, 2017), narrative methods of assessment such as learning stories are a popular way of involving children, families, and local communities in assessment and collaboratively planning for future learning (Cameron, 2018; Carr & Lee, 2012). Assessment as learning occurs when children reflect on and monitor their own progress to inform their future learning goals. However, there are two perspectives on

assessment as learning. From a positive perspective, assessment as learning supports children's engagement in self-assessment and self-monitoring with the intention of informing goals for future learning (Rinaldi, 2006). The alternate view of assessment as learning is on compliance with meeting criteria rather than supporting the development of understanding (Torrance, 2007).

Ensuring that assessment is fair and meaningful is a core aspect of effective assessment (Black & William, 1998). The effectiveness of assessment is often considered in terms of whether or not the information gathered is fair, valid, and reliable, although issues of authenticity to learners and manageability by teachers are also factors (Absolum, 2006). Within assessment and measurement contexts, it is not uncommon for researchers or educators to refer to an assessment as being reliable or valid. However, Fan (2013) notes that constructs like fairness, validity, and reliability are not characteristics of the assessment tool or methods, but rather derived from the process and can only be characteristics of the scores or information obtained from using an assessment with a specific group. While seemingly a trivial subtlety, many researchers and measurement experts have argued this clarification is critically important as referring to the assessment tool or methods as holding a specific characteristic can lead to inaccurate assumptions about assessment tools and methods that can undermine the integrity of how an assessment is used and for what purposes (c.f. Fan, 2013; Snyder et al., 1993; Thompson, 2003). To ensure quality assessment practices, whether designed for local formative-based assessment or wider standardised assessment for evaluation, the 2014 *Standards for Educational and Psychological Testing*, developed jointly by American Educational Research Association, the American Psychological Association and the National Council on Measurement in Education provide a useful and full description of key issues related to validity; reliability; fairness; design and development; scoring; administration; rights and responsibilities, educational assessment, and programme review.

For the purposes of this volume, fairness is about ensuring the assessment content and processes are accessible to students and provide optimal and appropriate information about children's learning and does not discriminate against some learners (Bradbury, 2014; Luafutu-Simpson, 2011; Macy et al., 2005). Reliability refers to ensuring assessment information or interpretation is consistent over time and across assessors. Validity is concerned with the extent to which information and interpretation is appropriate for the intended use which can include ensuring the assessment measures what it claims to measure. Strong development and design of assessment tools and processes can help ensure fairness, validity, and reliability. Multiple forms and types of evidence can be gathered to examine the fairness, validity, and reliability of assessment information. However, the need for such forms of evidence depends on the use of the assessment information and the risk of harm—high stakes assessments require robust forms of evidence for their use and for each new instance of use.

For locally developed formative assessment in which the outcomes of assessment involve less risk of harm, understanding the principles of assessment quality characteristics may be sufficient. Other notable quality characteristics include authenticity which relates to whether the assessment information is relevant to the learner and the context, and manageability which relates to how much work is involved for the

teacher to use the assessment approach. The concepts of being fair, valid, and reliable are important to understandings about assessment because they focus on making sure the information that results from assessment is useful for teachers and learners. Assessment information that is invalid, unfair, or unreliable would not give teachers and learners a proper indication of what learners know and can do (McLachlan et al., 2013). Issues of fairness and equity are further explored by Cowie and Mitchell (2015) and Tierney (2013), who argue that this notion is fundamental to children's success in school.

This volume demonstrates that there is growing interest in the issues related to the assessment of infants, toddlers, and young children in early childhood settings and the integral relationships with families and local communities. It also shows educators are increasingly seeing the value in using a range of assessment processes for a range of important purposes with a focus on the fit/match between purpose and process being important for gathering quality data. The authors have addressed some of the crucial issues related to using a range of data systems to assess the learning and development of infants, toddlers, and young children. These data systems help to capture individual learning and development, as well as insights into children's learning potential. They also capture children's learning during play, providing insights into how play acts as a leading activity in children's acquisition of knowledge and skills. Finally, the data systems used in these chapters show how innovative uses of data can provide potentially discrepant data (Timperley, 2005), which gives teachers greater insights into children's learning and offers new and sometimes unforeseen opportunities to amplify or enrich children's learning.

## 1.6 Overview of the Volume

The volume has been divided into four sections, which explore how data systems are used in early childhood settings, different approaches to documentation of children's learning, the role that children play in assessment and how to enhance teachers' practice in this important component of their work.

## 1.7 Data Systems in Early Childhood Practice

In Chap. 2, Claire McLachlan and Tara McLaughlin provide an historical and contemporary review of the roles of teachers as assessors of children's progress, with a particular focus on the New Zealand context in which their research has been primarily based. As they argue, assessment has only been a key topic of interest since the release of *Te Whāriki* (Ministry of Education, 1996) and remains a contentious topic following the release of the revised *Te Whāriki* (Ministry of Education, 2017). The authors explore assessment practices, trends, and influences over time, using New Zealand as a case example for the complexities of assessment. They argue the current

dominance of narrative approaches to assessment in New Zealand (Cameron, 2018; Mitchell, 2008) has led to challenges in teachers' workload and to identified problems in adequately assessing progress in children's learning (Education Review Office, 2016). This chapter uses the metaphor of a pendulum swing to illustrate movement between the use of objective and subjective assessment measures and shifting views of early childhood learning and development. The need for teachers to have access to a wider range of assessment and evaluation measures to use to analyse and support children's progress towards the learning outcomes of *Te Whāriki* (Ministry of Education, 2017) and other child-centred, culturally responsive curriculum are explored.

In Chap. 3, Monica Cameron draws on findings of her doctoral study to explore the use of assessment information in early childhood settings. As she argues, the assessment of children's learning and development in early childhood education (ECE) is a complex, yet integral, element of effective teacher practice. A commitment to using assessment information about children's strengths, interests, and needs in formative ways to meaningfully plan for children's ongoing learning adds even further complexity. A formative focus on assessment is affirmed within both *Te Whāriki* (Ministry of Education, 1996, 2017) and the learning story framework (Carr, 2001), yet the ways in which New Zealand teachers enact such assessment in practice has not been extensively researched. Cameron's study explored teachers' purposes, practices, and knowledge of assessment in relation to four-year-old children. Chapter 3 presents an overview of this study, paying particular attention to the ways that teachers gather assessment information and then in turn use this assessment to plan for children's learning. Cameron argues that teachers need to gather assessment information via a range of methods and to use this information in a timely way to help ensure they are engaging in effective assessment and planning practices.

## 1.8 Different Approaches to Documentation

In this section, several authors explore the alternative ways in which teachers approach the use of documentation in their practice. The advantages and disadvantages of e-portfolios in particular are explored in this section.

Chapter 4, written by Prahbat Rai, Marilyn Fleer, and Glykeria Fragkiadaki, proposes a cultural-historical model of assessing children's learning and development. The chapter offers insights into how the concepts of social situation of development, zone of proximal development, and dialectical relationship between the everyday and scientific concept could be used to understand children's motive orientations and evaluation of their maturing and matured psychological functions (i.e. higher mental functions such as logical thinking, focused attention, mediated memory, use of drawing marks or written words). The data presented come from the digital educational experiment titled Conceptual PlayWorld@homeLIVE. This chapter reports on examples from a child's home setting to show how Conceptual PlayWorld can be used as an auxiliary tool to create condensed learning opportunities

and produce opportunities for assessment and to support best performance by the child.

Chapter 5, written by Lisa Kervin, Sue Bennett, and Cathrine Neilsen-Hewett, provides an in-depth exploration of how e-portfolios can be used as assessment systems and an effective method of documenting and communicating learning in the early years. As they argue, e-portfolio systems have been introduced into early years education and have not previously been a focus of in-depth research that moves beyond measures of uptake. These forms of digital documentation capture children's learning but raise questions around what is captured and the time this takes for educators, and also how these technology platforms can be used to strengthen practice while also communicating with families. The authors share insights from a project designed to examine the processes and practices of using StoryPark in two early years settings, highlighting the unintended or unseen consequences of its use. Drawing upon observations within the services, interviews with educators, and analysis of StoryPark entries, the authors examine the contexts, goals, and priorities of the services alongside their use of StoryPark. Their analysis of data shows how digital tools influence what 'counts' as a learning experience, how learning is reported to parents and carers, and how digital technologies are influencing children's experiences of learning.

Anne-Marie Morrissey, Llewellyn Wishart, Natalie Robertson, and Deb Moore explore the issues of having the tools and the time for noticing learning in the outdoors in Chap. 6. These authors argue that observation has long been an integral part of an early childhood teacher's practice, essential for effective assessment, planning, teaching, and evaluation. However, they argue that this practice is now often diverted into a daily demand in Australia to produce digital documentation that provides a visually engaging social media-like update of children's activities for family consumption, through online e-portfolio platforms. Much of this time-consuming documentation is framed for administrative, communication, and marketing purposes, becoming datafied "new economic objects" (Gallagher, 2018, p. 714) and is not necessarily assessment focussed or supportive of teachers' pedagogical practice. They suggest that teachers have lost both the time for, and professional agency and ownership in relation to, purposive observational processes. Using Mason's (2002) 'discipline of noticing' as a framework for systematic and reflective observational processes, this chapter draws on the authors' experiences as both early childhood teachers and researchers, to focus on possibilities for teacher 'noticing' particularly in outdoor learning contexts. It proposes that teachers need both time and an extended range of data systems that are effective and educative for the observation, assessment, and evaluation of children's responses and teachers' practices in outdoor contexts.

Kristín Karlsdóttir and Johanna Einarsdóttir also talk about using documentation as a tool for changing practices in Iceland in Chap. 7. They propose that teachers and researchers in Iceland and elsewhere are revisiting notions of what constitutes effective assessment in early childhood education, including debates on the aims and the methods used. As they argue, one focus centres on children's learning and the need to test individual children, while the other emphasises documentation on how children are learning within a social context with the aim of using the information to transform



teaching practices. Chapter 7 presents a collaborative action research project that focused on documentation in five preschools in Iceland. Data were generated via interviews and observations in the preschools. The findings illustrate the educational process that took place as the preschool teachers began using documentation in their daily encounter with the children. As the authors explain, teachers' views of children and their competencies changed and the children's perspectives became more visible in the daily life of preschool. However, they highlight that time is a constraint, especially if teachers want to involve children more deeply in their own assessment.

## 1.9 Children and Data Systems

The next section of this volume examines the role that children can play in assessment systems in early childhood settings, with insights into how the approaches adopted can give teachers greater insights into how to support children's learning.

In Chap. 8, Cameron van der Smeë and Ben Williams explore how to involve children in assessment in physical education. They argue that there has been a growing call for teachers to implement student-centred pedagogies in junior primary settings, as part of aiding continuity of learning. The use of these approaches is argued to support teachers to listen to and respond to the needs and interests of a diverse student population in a localised context. To effectively deliver a student-centred approach, the authors propose that a teacher must develop a nuanced understanding of all their students, but this has been reported as challenging for teachers. Chapter 8 presents insights gained from a research project focused on the embodied interactions of a cohort of year one and two children (in physical education and on the playground) through use of a number of ethnographic and child-centred methods to examine the children across a variety of settings. This study provided insights into the needs and interests of the children, both inside and outside of the school setting. The authors conclude that teachers could utilise a similar multimethod approach, and thereby gain a deeper understanding of the needs and interests of their students, which will help with the planning and implementation of student-centred approaches.

Chapter 9, written by Sue Emmett, explores issues related to documentation of children's learning in early childhood settings in Australia. She reflects upon the words from Malaguzzi: 'Our image of the child is rich in potential, strong, powerful, competent ...' (1996, p. 117) and considers how the words 'strong, powerful, competent' are interpreted and operationalised in contemporary Australian early childhood education. Chapter 9 explores issues related to children's needs and vulnerabilities and examines why and how pedagogies of social and emotional wellbeing are understood and enacted within ECE; how they are documented and assessed; and how they are interpreted by communities. Chapter 9 explores the myths propagated about wellbeing pedagogies and draws on the author's recent empirical research to reconceptualise the assessment of social and emotional wellbeing utilising an innovative data systems approach.



In Chap. 10, Anna Fletcher discusses self-assessment as a form of assessment which positions learners as critically reflective connectors between task requirements and the learning process by requiring them to reflect on what they have learned so far, identify strengths and weaknesses in their learning, and make plans to help them progress to meet their learning goals. This chapter explores self-assessment within an early primary context from two perspectives. First the chapter highlights the role of self-assessment in fostering children's ability as co-owners of their learning process. Second, the chapter examines how the artefacts of learning generated by the self-assessment process may present a rich source of summative assessment data. The chapter draws on social cognitive theory to present and analyse data from students in Year 2 (age eight), which derive from a larger, one-setting, cross-sectional practitioner research study conducted at an independent primary school in the Northern Territory of Australia. The chapter examines how the data systems approach used presented new and interesting opportunities for children's learning.

Pauline Harris explores how children's voices can be incorporated into the assessment process in Chap. 11. As she argues, it is well known that when data are used to inform teaching and learning, assessment is a powerful tool for transforming pedagogic practices. However, she questions what place children, and more specifically their voices, have in assessment data that are gathered to inform their learning and transform the pedagogies they experience. Chapter 11 explores this question, underpinned by children's rights to have input on decisions affecting their lives. She considers how young children as citizens are imagined and constructed in and through assessment practices and the pedagogies they inform. Framed by principles of authentic assessment in early childhood settings, this chapter explores how data systems can effectively gather children's voices, illuminate children's learning and engagement, and transform pedagogies,

In Chap. 12, Elizabeth Rouse discusses issues related to children being assessors of their own learning, particularly through reflection on their own work. Rouse frames her argument around the requirements of the national early years learning framework (DEEWR, 2009), from which the Victorian Early Years Learning and Development Framework [0–8 years] identifies one of five key learning outcomes for children is to be confident and engaged learners (DET, 2017). She contends that assessment is a key aspect of teacher practice; to not only assess children's learning, but to inform planning and teaching moving forward. Giving children opportunities to inform adults about their skills and learning is a key principle of assessment in the early years (Clooney et al., 2019) and listening to the voices of children provides authentic evidence of children's learning. This chapter presents the findings of a research project, which drew on children's voices to explore the extent to which they were able to assess their learning and describe themselves as competent learners. Using interviews with children, the study found that children could confidently reflect on their own learning and themselves as learners.

## 1.10 Enhancing Teacher Practice Through Use of Data Systems

In this final section of the volume, research which has examined how teachers can be supported to develop their knowledge and skills to use a range of data systems is explored.

In Chap. 13, Sue Cherrington, Tara McLaughlin, Karyn Aspden, Lynda Hunt, and Claire McLachlan examine to the use of new tools for teachers to explore children's experiences of curriculum in New Zealand kindergartens. The Data, Knowledge, Action (DKA) programme of research began from the stance that access to and use of quality data can enhance early childhood teachers' practices in multiple ways, including assessment for children's learning, pedagogy, relationships with children's families, and evaluation of teacher practice. In this programme of research, the authors worked with teachers in seven New Zealand kindergartens across three projects to explore the use of different data systems and tools intended to help teachers gather information to broaden and deepen their knowledge about their pedagogical practices and children's curriculum experiences and learning. Each project produced data related to specific aspects of practice and children's learning that teachers inquired into, together with data on their experiences, perceptions, and shifts in thinking and practice as a result of engaging with the data systems and resulting information. In this chapter, the authors provide an overview of the DKA research programme and component projects, and describe the key tools and systems used to date. The impact on teachers' thinking about both children's curriculum experiences and their own pedagogical practice through the use of these tools is examined.

Chapter 14, written by Karyn Aspden, Lynda Hunt, Tara McLaughlin, and Sue Cherrington, reflects on how to build teachers' knowledge and confidence to use a new range of data collection tools. As they argue, the effective and appropriate use of observation, assessment, and evaluation approaches in early childhood settings depends, in part, on the capacities of teachers to interpret, draw inferences, and collaboratively plan for future experiences. Access to meaningful data or information from observation, assessment, and evaluation is only as good as practitioners' abilities to use and integrate this information to make informed decisions. Pedagogical leadership and shared team engagement in supported professional learning and development is proposed as being central to integration of innovative approaches into practice. In the context of this project, a teacher researcher became responsible for the data collection in a partner setting as well as leading their own setting in use of observation, assessment, and evaluation data. Drawing from interviews and feedback this chapter explores this unique role, and the insights shared by the teachers who became teacher researchers. The chapter explores the preparation and ongoing training that teacher researchers engaged in to form and enact their role, as well as the collaboration and support between the teacher researchers that was identified as critical to success. The key shifts in teacher and team capacity though the teacher researcher role that led to meaningful and sustainable use of data to inform teaching and learning are examined.

In the final chapter, the editors draw together the themes from the chapters in this volume in relation to the usefulness of data systems for supporting pedagogy, curriculum planning, assessment, and evaluation. The chapters draw from both early childhood and junior primary settings, offering insights into how to provide useful and ‘fit for purpose’ assessment of children from birth to eight years. The notion of children’s agency as learners is evident in many of the chapters, along with the importance of teachers being supported to be researchers into their own teaching. There are some valuable insights into how assessment practice can and arguably should evolve going forward, if we are to better support our youngest learners. The future possibilities of data systems in early years settings are explored, including the conditions required for effective assessment to occur. This chapter also explores some of the implications of these studies for supporting families, provision of professional learning and development and for future policy development.

## References

- Absolum, M. (2006). *Clarity in the classroom: Using formative assessment, building learning focused relationships*. Hodder Education.
- Akers, L., Del Grosso, P., Atkins-Burnett, S., Monahan, S., Boller, K., Carta, J., & Wasik, B. A. (2015). *Research brief—Tailored teaching: The need for stronger evidence about early childhood teachers’ use of ongoing assessment to individualize instruction. Research brief OPRE report #2015-59*. Mathematica Policy Research.
- Anthony, G., McLachlan, C. J., & Lim, F. P. (2015). Narrative assessment: Making mathematics learning visible in early childhood settings. *Mathematics Education Research Journal*, 27(3), 385–400.
- Arthur, L., Beecher, B., Death, E., Dockett, S., & Farmer, S. (2012). *Programming and planning in early childhood settings* (5th ed.). Cengage Learning.
- Australian Curriculum and Reporting Authority (ACARA). (2011). *Guide to the national quality standard*. <http://www.acecqa.gov.au/national-quality-framework/the-national-quality-standard>
- Bagnato, S. J., Goins, D., Pretti-Frontczak, K., & Neisworth, J. (2014). Authentic assessment as “best practice” for early childhood intervention: National consumer validity research. *Topics in Early Childhood Special Education*, 34(2), 116–127.
- Bagnato, S. J. (2007). *Authentic assessment for early childhood intervention: Best practices*. The Guilford Press.
- Barghaus, K. M., & Fantuzzo, J. W. (2014). Validation of the preschool child observation record: Does it pass the test for use in head start? *Early Education and Development*, 25(8), 1118–1141.
- Barron, B., & Darling Hammond, L. (2008). How can we teach for meaningful learning? In L. Darling-Hammond (Ed.), *Powerful learning: What we know about teaching for understanding*. Jossey Bass.
- Bernstein, B. (1996). *Pedagogy, symbolic control and identity: Theory, research, critique*. Taylor & Francis.
- Black, P., & William, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice*, 5(1), 7–74. <https://doi.org/10.1080/0969595980050102>
- Bodrova, E., & Leong, D. (2015). Vygotskian and post-Vygotskian views on children’s play. *American Journal of Play*, 7(3), 371–388.
- Bowman, B., Donovan, S., & Burns, S. (2001). *Eager to learn: Educating our pre-schoolers. Report of Committee on Early Childhood Pedagogy. Commission on Behavioural and Social Sciences and Education National Research Council*. National Academy Press.

- Bradbury, A. (2014). Early childhood assessment: Observation, teacher ‘knowledge’ and the production of attainment data in early years settings. *Comparative Education*, 50(3), 322–339.
- Bradbury, A. (2015). Learning, assessment and equality in early childhood education (ECE) settings in England. *European Early Childhood Research Journal*, 22(3), 347–354.
- Bradbury, A. (2019). Datafied at four: The role of data in the ‘schoolification’ of early childhood education in England. *Learning, Media and Technology*, 44(1), 7–21. <https://doi.org/10.1080/17439884.2018.1511577>
- Brooker, L. (2010). Learning to play or playing to learn? Children’s participation in the cultures of homes and settings. In L. Brooker & S. Edwards (Eds.), *Engaging play* (pp. 39–53). Open University Press.
- Brookhart, S. M. (2008). *Formative assessment strategies for every classroom* (2nd ed.). ASCD.
- Cameron, M. (2018). *Assessing four-year-old children’s learning: New Zealand early childhood teachers’ purposes, practices and knowledge*. Unpublished Ed. thesis, Massey University.
- Carr, M., & Lee, W. (2012). *Learning stories: Constructing learner identities in early education*. Sage.
- Carr, M. (2001). *Assessment in early childhood settings: Learning stories*. Sage.
- Casbergue, R. M. (2011). Assessment and instruction in early childhood education: Early literacy as a microcosm of shifting perspectives. *Journal of Education*, 190(1/2), 13–20.
- Chaiklin, S. (2003) The zone of proximal development in Vygotsky’s analysis of learning and instruction. In A. Kozulin, B. Gindis, V. S. Ageyev, & S. M. Miller (Eds.), *Vygotsky’s educational theory in cultural context* (pp. 39–63). Cambridge University Press.
- Clooney, D., Jackson, J., & Mitchell, P. (2019). *Assessment of children as confident and involved learners in early childhood education and care: Literature review*. Victorian Curriculum and Assessment Authority. [https://research.acer.edu.au/early\\_childhood\\_misc/11](https://research.acer.edu.au/early_childhood_misc/11)
- Cooper, M., Hedges, H., & Dixon, H. (2014). Weaving RIE with Te Whāriki: Re-thinking family involvement in assessment of learning dispositions. *Early Child Development & Care*, 184(5), 733–748.
- Cowie, B., & Mitchell, L. (2015). Equity as family/whānau opportunities to contribute to formative assessment. *Assessment Matters*, 8, 119–141.
- Darling-Hammond, L., & Snyder, J. (1999). Authentic assessment of teaching in context. *Teaching and Teacher Education*, 16, 523–545.
- Department of Education and Training. (2017). *Practice principle guide—Assessment for learning and development*. <https://www.education.vic.gov.au/Documents/childhood/providers/edcare/praguideassessmentforlearning2017.pdf>
- Department of Education, Employment and Workforce Relations. (2009). *Belonging, being and becoming. The early years learning framework for Australia*. DEEWR.
- Dunphy, E. (2010). Assessing early learning through formative assessment: Key issues and considerations. *Irish Educational Studies*, 29(1), 41–56.
- Ebbeck, M., Teo, G., Tan, C., & Goh, M. (2014). Relooking assessment: A study on assessing developmental learning outcomes in toddlers. *Early Childhood Education Journal*, 42(2), 115–123.
- Education Review Office. (2013). *Working with Te Whāriki*. <http://www.ero.govt.nz/publications/working-with-te-whariki/>
- Education Review Office. (2016). *Early learning curriculum*. <http://www.ero.govt.nz/publications/early-learning-curriculum/>
- Edwards, S. (2009). *Early education and care: A sociocultural approach*. Pademelon Press.
- Elkonin, D. B. (2005a). On the historical origin of role play. *Journal of Russian & East European Psychology*, 43(1), 49–89.
- Elkonin, D. B. (2005b). The subject of our research: The developed form of play. *Journal of Russian & East European Psychology*, 43(1), 22–48.
- Espinosa, L. M. (2005). Curriculum and assessment considerations for young children from culturally, linguistically and economically diverse backgrounds. *Psychology in the Schools*, 42(8), 837–853.

- Espinosa, L. (2012). Assessment of young English-language learners. In C. A. Chapelle (Ed.), *The Encyclopedia of applied linguistics*. <https://doi.org/10.1002/9781405198431.wbeal0057>
- Fan, X. (2013). “The test is reliable”; “the test is valid”: Language use, unconscious assumptions, and education research practice. *The Asia-Pacific Education Researcher*, 22(2), 217.
- Fleer, M., & Robbins, J. (2006). Diversity in the context of universal early childhood education: Family involvement or family exclusion? In M. Fleer, S. Edwards, M. Hammer, A. Kennedy, A. Ridgway, J. Robbins, & L. Surman (Eds.), *Early childhood learning communities: Sociocultural research in practice* (pp. 57–69). Pearson.
- Fleer, M., & Richardson, C. (2008). Cultural-historical assessment: Mapping the transformation of understanding. In A. Anning, J. Cullen, & M. Fleer (Eds.), *Early childhood education: Society and culture* (2nd ed., pp. 130–144). Sage.
- Gallagher, A. (2018). The business of care: Marketization and the new geographies of childcare. *Progress in Human Geography*, 42(5), 706–722. <https://doi.org/10.1177/2F0309132517702970>
- Gordon Commission. (2012). *To assess, to teach, to learn: A vision for the future of assessment. Technical report executive summary*. [http://www.gordoncommission.org/rsc/pdfs/technical\\_report\\_executive\\_summary.pdf](http://www.gordoncommission.org/rsc/pdfs/technical_report_executive_summary.pdf)
- Grisham-Brown, J., Hallam, R., & Brookshire, R. (2006). Using authentic assessment to evidence children’s progress toward early learning standards. *Early Childhood Education Journal*, 34(1), 45–56.
- Hipkins, R. (2007). *Assessing key competencies: Why would we? How could we? Ministry of Education implementation pack for schools*. NZ Council for Educational Research.
- Jordan, B. (2010). Co-constructing knowledge: Children, teachers and families engaging in a science-rich curriculum. In L. Brooker & S. Edwards (Eds.), *Engaging play* (pp. 96–107). Open University Press.
- Karlsdottir, K., & Garoarsdottir, B. (2010). Exploring children’s learning stories as an assessment method for research and practice. *Early Years: An International Journal of Research and Development*, 30(3), 255–266.
- Luafutu-Simpson, P. (2011). *Exploring the teaching of effective approaches for assessing young Samoan children’s learning in early childhood centres: Developing an authentic Samoan lens*. Ako Aotearoa Publishers.
- Macy, M. G., Bricker, D. D., & Squires, J. K. (2005). Validity and reliability of a curriculum-based assessment approach to determine eligibility for Part C services. *Journal of Early Intervention*, 28(1), 1–16.
- Malaguzzi, L. (1996). *The hundred languages of children: The Reggio Emilia approach to early childhood education*. Ablex Publishing Corporation.
- Mason, J. (2002). *Researching your own practice: The discipline of noticing*. Routledge.
- McLachlan, C., Edwards, S., Margrain, V., & McLean, K. (2013). *Children’s learning and development: Contemporary assessment in the early years*. Palgrave Macmillan.
- McLachlan, C., Fleer, M., & Edwards, S. (2018). *Early childhood curriculum: Planning, assessment and implementation* (3rd ed.). Cambridge University Press.
- McLachlan, C. (2017). Assessment in early childhood education. In L. Meyer (Ed.), *Oxford bibliographies in education*. Oxford University Press. <https://doi.org/10.1093/OBO/9780199756810>
- Ministry of Education. (1996). *Te Whāriki. He Whāriki Mātauranga mō ngāmokopuna o Aotearoa. Early childhood curriculum*. Learning Media.
- Ministry of Education. (2011). *Ministry of Education position paper: Assessment (schooling sector)*. Learning Media. <http://assessment.tki.org.nz/Media/Files/Ministry-of-Education-Position-Paper-Assessment-Schooling-Sector-2011>
- Ministry of Education. (2017). *Te Whāriki. He Whāriki Mātauranga mō ngāmokopuna o Aotearoa. Early childhood curriculum*. <https://www.education.govt.nz/assets/Documents/Early-Childhood/ELS-Te-Whariki-Early-Childhood-Curriculum-ENG-Web.pdf>
- Mitchell, L. (2008). *Assessment practices and aspects of curriculum in early childhood curriculum*. NZCER.

- Moss, P., Dahlberg, G., Grieshaber, S., Mantovani, S., May, H., Pence, A., Rayna, S., Swadener, B., & Vandenbroeck, M. (2016). The organisation for economic co-operation and development's early learning study: Opening for debate and contestation. *Contemporary Issues in Early Childhood*, 17(3), 343–351. <https://doi.org/10.1177/2F1463949116661126>
- Nah, K. (2014). Comparative study of child assessment practices in English and Korean preschools. *European Early Childhood Education Research Journal*, 22(5), 660–678.
- Nolan, A., & Kildery, A. (2010). Postdevelopmentalism and professional learning: Implications for understanding the relationship between play and pedagogy. In L. Brooker & S. Edwards (Eds.), *Engaging play* (pp. 108–122). Open University Press.
- OECD. (2020). *Early learning and child well-being: A study of five-year-olds in England, Estonia, and the United States*. OECD Publishing. <https://doi.org/10.1787/3990407f-en>
- Pence, A. (2016). Baby PISA: Dangers that can arise when foundations shift. *Journal of Childhood Studies*, 41(3), 54. <https://doi.org/10.18357/jcs.v41i3.16549>
- Phair, R. (2015). *Improving early learning outcomes: The contribution of international comparative data*. OECD.
- Phair, R. (2021). *International early learning and child well-being study assessment framework*. In OECD Education Working Papers No. 246, OECD Publishing. <https://doi.org/10.1787/af403e1e-en>
- Poehner, M. E., & Lantolf, J. (2005). Dynamic assessment in the language classroom. *Language Teaching Research*, 9, 233–265.
- Puckett, M. B., & Black, J. K. (2008). *Meaningful assessment of the young child: Celebrating development and learning* (3rd ed.). Pearson.
- Rinaldi, C. (2006). *Documentation and assessment. What is the relationship? In dialogue with Reggio Emilia: listening, researching and learning*. London
- Rogoff, B. (2003). *The cultural nature of human development*. Oxford University Press.
- Snow, C. E., & Van Hemel, S. B. (Eds.). (2008). *Early childhood assessment: Why, what and how. Report of the Committee on Developmental Outcomes and Assessment for Young Children for the National Research Council*. National Academies Press.
- Snyder, P., Lawson, S., Thompson, B., Stricklin, S., & Sexton, D. (1993). Evaluating the psychometric integrity of instruments used in early intervention research: The Battelle Developmental Inventory. *Topics in Early Childhood Special Education*, 13(2), 216–232.
- Standards and Testing Agency. (2020). *2021 early years foundation stage: Assessment and reporting arrangements (ARA)*. <https://www.gov.uk/government/publications/2021-early-years-foundation-stage-assessment-and-reporting-arrangements-ara>
- Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2010). *Early childhood matters. Evidence from the effective pre-school and primary education project*. Routledge.
- Thompson, B. (2003). Guidelines for author reporting score reliability estimates. In B. Thompson (Ed.), *Score reliability: Contemporary thinking on reliability issues* (pp. 91–101). SAGE Publications.
- Tierney, R. D. (2013). Fairness in classroom assessment. In J. H. McMillan (Ed.), *Sage handbook of research on classroom assessment* (pp. 125–144). Sage.
- Timperley, H. S. (2005). Instructional leadership challenges: The case of using student achievement information for instructional improvement. *Leadership and Policy in Schools*, 4(1), 3–22. <https://doi.org/10.1080/15700760590924591>
- Torrance, H. (2007). Assessment as learning? How the use of explicit learning objectives, assessment criteria and feedback in post-secondary education and training can come to dominate learning. *Assessment in Education*, 14(3), 281–294.
- United Nations. (1989). *Convention on the rights of the child*. <https://www.ohchr.org/en/professionalinterest/pages/crc.aspx>
- Vygotsky, L. S. (1967). Play and its role in the mental development of the child. *Soviet Psychology*, 5, 6–18. <https://doi.org/10.2753/RPO1061-040505036>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.



- Vygotsky, L. S. (1986). *Thought and language*. MIT Press.
- Wortham, S. C. (2008). *Assessment in early childhood education*. Pearson.
- Zaporozhets, A. V. (1997). Principal problems in the ontogeny of the mind. *Journal of Russian & East European Psychology*, 35(1), 53–94. <https://doi.org/10.2753/RPO1061-0405350153>
- Zaporozhets, A. V., & Elkonin, D. B. (1971). *The psychology of preschool children*. Trans. by (J. Shybut & S. Simon) Massachusetts Inst. of Technology P.
- Zaporozhets, A. V. (1986). *Izbrannye psichologicheskie trudy* [Selected psychological works]. Pedagogika.
- Zigler, E., & Styfco, S. J. (2010). *The hidden history of Head Start*. New York: Oxford University Press.

**Claire McLachlan** is Executive Dean of the Institute of Education, Arts and Community at Federation University Australia. This role involves leadership of the Institute across six regional campuses in Victoria. Prior to this appointment, she was Dean of the School of Education at Federation, Head of School for Te Hononga, the School of Curriculum and Pedagogy in the Faculty of Education, University of Waikato, and Professor of Childhood Education at Massey University, where she taught courses on languages, literacies, cognition, pedagogy, assessment and evaluation. She has also supervised over 60 HDR students, including ten doctoral completions to date. She has published 9 books, has over 200 research outputs, and has received over \$6 million in research and consultancy funding. Her primary field of research is early childhood education, and her platform of research is focused on literacy, physical activity, curriculum, pedagogy, assessment and evaluation. In addition to personal research, she has undertaken wide ranging evaluation research for three government Ministries in New Zealand; and internationally, she has provided consultancy for the Semarang State University (UNNES) in Central Java, Indonesia and the New Zealand Ministry of Foreign Affairs for education in Tokelau. She is currently President of the Victorian Council of Deans of Education, the Victorian representative on the Australian Council of Deans of Education, a member of the UNESCO-IBE Early Reading Panel, the New Zealand Ministry of Education Early Childhood Research Policy Forum and ECE Sector Reference Group, and the Australian Centre for Policy Development's intergovernmental Council for Early Childhood Development.

**Tara McLaughlin** is a Senior Lecturer in Early Years Education and the founder and director of the Early Years Research Laboratory in the Institute of Education at Massey University. Prior to this appointment, she was a Research Scientist at the University of Florida in the Anita Zucker Center for Excellence in Early Childhood Studies. As a teacher, teacher educator and researcher in Early Years, she is committed to supporting learning environments that promote diverse and equitable opportunities for all children and families. She maintains an active research programme in range of topics related to early learning supports and services for young children, including children with disabilities, their families, and the teachers and specialists who serve them. Her research focuses on inclusive high-quality early intervention and early childhood education. Key focus areas include exploring (a) evidence-based, intentional and social-emotional teaching practices; (b) assessment and data-informed teaching; and (c) innovative professional learning and development. Her research uses an eclectic mix of research methods including statistical techniques and a focus on measurement quality in educational research. She is currently the lead investigator in the data, knowledge, action projects, funded by the Teacher Led Innovation Fund (TLIF) and Teaching, Learning, Research Initiative (TLRI).

**Sue Cherrington** is an Associate Professor in the School of Education and is Director of the Institute for Early Childhood Studies at Victoria University of Wellington. She has an extensive background in early childhood education, as both a kindergarten teacher and in early childhood teacher education. Her overarching research focus is on professional and pedagogical practices in ECE. Within this broad focus, her research concentrates on EC teacher thinking and

reflection, including the use of video to support collective thinking and reflection; teacher professional learning and development, particularly through professional learning communities (PLC) and the evaluation of professional development programmes for EC practitioners; teachers' ethical and professional experiences and practices; teachers' professional and pedagogical responses to working with diverse children and families; and investigation of the use of innovative data collection tools for use by teachers in ECE settings. She has developed methodological expertise in the use of video stimulated recall methods within educational settings.

**Karyn Aspden** is a Senior Lecturer in Early Years Education in the Institute of Education at Massey University. She began her career as a teacher and leader in a range of early childhood services, before moving into initial teacher education. She is Programme Coordinator of the Graduate Diploma of Teaching (ECE). Her teaching areas include leadership in early childhood education, studies of infants and toddlers, professional practice and early intervention. She is passionate about supporting both student teachers and experienced teachers to enhance their professional skills and knowledge, to be effective, informed and intentional teachers of young children. Her research interests include practicum, effective teaching practice, early intervention and infant and toddler pedagogy. The importance of meaningful and responsive relationships is the thread that weaves through each of these areas.



**Part II**  
**Data Systems in Early Childhood Practice**

# Chapter 2

## Revisiting the Roles of Teachers as Assessors of Children’s Progress: Exploration of Assessment Practices, Trends, and Influences Over Time



Claire McLachlan and Tara McLaughlin

**Abstract** Assessment of children’s learning and development is a cornerstone of early childhood education, yet the complexities of what to assess, why, and how have been described in numerous research-based reports. Tensions among the purposes for assessment, paired with various debates about quality assessment practices, have led to views and perspectives that tend to polarise approaches, methods, and purposes. Increasingly, there is a focus on tracking children’s learning progressions or pathways to achieving curricular learning outcomes. Information about children’s progression may be of interest to parents, teachers, and policy makers. In New Zealand, the current dominance of narrative approaches to assessment has led to challenges in teachers’ workload and to identified problems in adequately assessing progress in children’s learning and development. This chapter will provide an historical analysis of the assessment approaches that early childhood teachers in New Zealand have used over time and the various influences on assessment practices as a case example for the complexities of assessment. We use the metaphor of a pendulum swing to illustrate movement between the use of objective and subjective assessment measures and shifting views of early childhood learning and development. We argue there is a need for teachers to have robust understanding of learning and development and effective assessment and evaluation practices, together with access to a range of assessment and evaluation measures, in order to appropriately analyse and support children’s progress towards the learning outcomes of *Te Whāriki* and other child-centred, culturally responsive curriculum.

---

C. McLachlan (✉)

Institute of Education, Arts and Community, Federation University Australia, Ballarat, VIC, Australia

e-mail: [c.mclachlan@federation.edu.au](mailto:c.mclachlan@federation.edu.au)

T. McLaughlin

Institute of Education, Massey University, Palmerston North, New Zealand

e-mail: [T.W.McLaughlin@massey.ac.nz](mailto:T.W.McLaughlin@massey.ac.nz)

## 2.1 Introduction

In his seminal article on assessment, Crooks (1988) addressed the issue of why we need to assess. He argued that it is undertaken for numerous reasons at all levels of education, including the following: selection and placement; motivation; focussing, consolidating, and structuring learning; guiding and correcting learning; determining readiness to proceed; grading achievement and evaluating teaching. He also argued that there some concomitant factors related to assessment which determine whether learning happens, which include wanting to learn, learning by doing (practice, from mistakes, through trial and error), learning through feedback and making sense through connecting to previous learning, and integrating or understanding what is being learned. Although not all these applications of assessment are as relevant for early learning as they may be in the school context, such as grading achievement, the core reasons for assessment and influencing factors do impact assessment of young children's learning. Assessment of young children also includes a focus on development which may include assessment of development across health and education contexts (Featherstone, 2011; Nagle, 2007). For teachers working in early childhood education and care settings, done well, assessment of children's learning and development can provide invaluable information about children (Snow & van Hemel, 2008).

In this chapter, we examine the current perspectives about assessment in early childhood education (ECE), including identified purposes and characteristics of effective assessment. We use the metaphor of a pendulum swing to characterise the potentially polarising views or approaches to assessment that may lead to unbalanced practices. We argue that assessment in early childhood should be grounded in curriculum and based on an educational approach in which children's learning and development are examined in authentic contexts, while recognising the importance of a range of assessment purposes and the role of evaluation. The history of assessment in ECE settings in New Zealand is described as a case example of how assessment practices evolve over time and are shaped by multiple influences. The case example is offered to support those within and outside the New Zealand context to consider how policies and practices are shaped by a range of complexities and influences and encourage a balanced approached to assessment and evaluation.

## 2.2 The Purposes and Characteristics of Assessment in Early Childhood Education Settings

Assessment is important in ECE settings (Brassard & Boehm, 2007; McLachlan et al., 2013a, 2013b; Snow & van Hemel 2008). Assessment can be defined as the gathering of information to make informed instructional decisions, and this is its key purpose in ECE. Such informed instructional decisions include how teachers plan learning experiences for children, identifying areas of learning and development,

where children may need support or extension, making valued learning visible, and integrating learning with curriculum and programme provision (Brassard & Boehm, 2007; National Association for the Education of Young Children (NAEYC), 2003). More broadly, assessment can include evaluating the effectiveness of an early childhood programme or school (Bowman et al., 2001; Education Review Office (ERO), 2007). Brown (2004 p. 304) defines assessment as follows: "Assessment is any act of interpreting information about student performance, collected through any multitude of means or practices". Assessment can be seen to be in the best interests of the child when it involves families and leads to decisions that support children's learning and social contributions and recognises children's strengths, needs, interests, and preferences (Bagnato, 2007; Nagle, 2007). Assessment is also used to collaborate with families and other stakeholders with information about children's learning and development and help overcome issues related to disadvantage (Drummond, 2012; Featherstone, 2011; Siraj-Blatchford, 2004).

Bagnato (2007, p. 4–6) suggests that eight critical characteristics underpin quality assessment in early childhood: assessment must be useful, acceptable to families and professionals, be authentic, involve collaboration, have convergence among sources, be equitable, sensitive to even small changes, and congruent with those being assessed. Associated with the notion of convergence, it is also widely accepted that a variety of assessment measures should be employed to better understand children's learning and development (Bowman et al., 2001). The use of multiple assessment measures recognises that no single measure or approach can provide sufficient information and that integration of sources and perspectives provides a more comprehensive view of the child (Brassard & Boehm, 2007). Furthermore, ECE researchers advise that quality assessment practice benefits the children who are at the centre of the assessment process (Drummond, 2012). In New Zealand, ERO asserts the assessment practices in early childhood should "... enhance children's mana<sup>1</sup> and their learner identities" (2020, p. 22), inclusive of cultural identity and their sense of belonging.

In their review of quality assessment practices across six key sources of assessment guidelines and recommendations for early childhood and early intervention, Snyder et al. (2014) identified 13 key quality dimensions organised under the themes of quality of measurement, developmentally appropriate practice, and family involvement.

While these dimensions of quality are generally viewed as enduring, increasing attention has been placed on the importance of children's home cultures and languages in early learning and education. Looking beyond equity as responsiveness to individual differences, dimensions of quality might also consider technical adequacy for designated subgroups [quality of measurement], culturally designed collection and analysis practices [developmentally appropriate practice] and ensuring culturally and linguistically appropriate processes for collaboration and information sharing [family involvement].

---

<sup>1</sup> Prestige, power, and status including spiritual power.

### **2.2.1 *Formative, Summative, Ipsative, and Diagnostic Assessment***

Embedded throughout these quality indicators is the notion of fit for purpose (i.e. assessment approaches should be well aligned for their intended purpose, context, and target audience). Featherstone (2011) argues that teachers need to consider the purpose of assessment and the intended audience when deciding how to use and report assessment findings. To aid in supporting teachers with the range of assessment types, assessment approaches are often classified in association with overarching purposes such as formative, summative, ipsative, and diagnostic assessment.

*Formative assessment* involves assessing what and how children are learning and moving them on to the next level of thinking and learning. In early childhood, formative assessment can be conducted using a range of methods such as observations, short individual, or group interviews with children or families, video footage, photographs of children's work, and collections of artefacts. Formative assessment is clearly related to the notion of assessment for learning.

*Summative assessment* involves assessing what children have learned at the end of an instructional unit. In early childhood, summative assessment is typically conducted when teachers reflect on their observations and other assessments with children and analyse retrospectively what learning has occurred (Luff, 2012; Puckett & Black, 2008). Summative assessment is related to the notion of assessment of learning. One commonly used summative assessment is screening, which typically involves the evaluation of children with brief, low-cost procedures to identify those who may need further diagnostic assessment to qualify for special programmes or early intervention services (Ministry of Health, 2021).

*Ipsative assessment* involves assessing a child's performance against their own earlier performance to see if improvement has been made (Bagnato, 2007; Bagnato et al., 2014; Hipkins, 2007). The benchmark is the child's own performance, not that of other children. In early childhood, ipsative assessment is often portfolio-based, involving a collection of planned and spontaneous observations, as well as video or audio recordings, photographs, and artefacts of children's work. It might also involve test results, gathered by an educational or developmental psychologist. Ipsative assessment is linked with assessment for learning and can also be associated with assessment as learning when children engage in their own goal setting and monitoring of learning.

*Diagnostic assessment* is often used when a child is identified with a potential problem or difficulty with their learning and development. Typically, the assessment follows a referral from teachers and is undertaken by special education services. Diagnostic assessments often utilise multiple norm-based standardised instruments across multiple domains and observations of the child in the early childhood or home setting. This level of assessment involves multiple methods of summative assessment, both formal and informal, obtained from multiple sources.

Taken together, teachers need to have a sound knowledge of assessment quality dimensions and purposes to help ensure that they are engaging in good assessment

practices. This knowledge needs to include knowing how to use a range of methods for gathering assessment information, as well as being competent in analysing the information gathered and then using that information, whether that be ipsatively, summatively, formatively, or diagnostically. As this overview suggests, assessment in ECE is complex and has often led to contested debate related to questions such as what to assess, why, and how. To illustrate how these complex issues have played out in practice, the notion of the pendulum swing is used to set the context for the history of assessment of young children in New Zealand. The factors and influences on assessment, including the role of curriculum as a key driver of assessment practice and the importance of evaluation, are explored next.

### **2.3 The Pendulum Swing Between Objective and Subjective Assessment Measures of Early Childhood Learning and Development**

The empirical study of children began in the late eighteenth century but gained momentum in the late nineteenth century, with growing numbers of studies: 35 in 1890–1899; 491 from 1930 to 1939; and 362 from 1950 to 1958 (Cleverley & Phillips, 1986, p. 81). The study of children has escalated in the last 50 years, although studies of young children's domain knowledge, curriculum, and assessment, which have been a focus of our own research, are of much more recent origin. Akers et al., (2015 p. 1) argue that “The use of ongoing child assessment for individualisation is considered a best practice in early education programs and is a requirement in the Head Start Program Standards. Yet, despite this growing emphasis, we know little about how, or how well, ECE teachers implement ongoing assessment to adjust instruction or caregiving. We have limited evidence to support the link between use of ongoing assessment in early childhood and optimal child development”. Historical analysis of the assessment approaches that early childhood teachers in New Zealand and other countries have used over time might be viewed as a pendulum swinging between objective and subjective assessment measures and shifting views of early childhood learning and development.

A key driver of assessment approaches is alignment with the curriculum approach used, inclusive of curriculum values, principles, and content (McLachlan et al., 2018). Curricula differ in their orientation: they are either focussed on student performance, usually against predetermined standards, or they focus on children's achievement of competence (Bernstein, 1996). The curriculum model employed will have a consequential effect on the type of assessment data gathered and valued. Curriculum focussed on standards and/or domain knowledge is often associated with curricula such as the *Foundation Stage Curriculum* in the UK (Department of Education, 2017), which assesses specific knowledge and competencies. Curriculum focussed

on competencies in action or other ways of viewing holistic learning is often associated with social constructivist curriculum, such as the *Early Years Learning Framework* in Australia (Department of Education, Employment and Workforce Relations (DEEWR), 2009) or *Te Whāriki* (New Zealand Ministry of Education (NZMOE), 2017).

Regardless of the curriculum approach, it can be argued that many countries have moved from a psychometric and standardised approach for assessment in ECE—focussed on objectivity and premised on the notion that individual ability can be reliably measured and is unaffected by context or testing situation—to an educational approach in which the child’s performance or ability is intricately connected with and influenced by the context and that this functional ability is a more meaningful measure of learning and development (Crooks, 1988). Ongoing assessment, grounded in various forms of observation in authentic contexts, along with collaboration with families, often forms the core of assessment practices in ECE, with other sources and strategies used to supplement knowledge of the child as needed (Podmore, 2006). Teachers can use this range of assessment data for curriculum planning and evaluation and should also use teaching and programme evaluation data to strength practice and optimise outcomes for children and families (NAEYC, 2003).

The relationships among assessment, curriculum planning, and evaluation are noted internationally, as many curriculum resources demonstrate (DEEWR, 2009; Ministry of Education, Singapore, 2003; NZMOE, 2017; Swedish National Agency for Education, 2010). Evaluation of curriculum implantation and effectiveness needs to include analysis of how effective assessment practices are for supporting children’s learning and evaluation of teaching effectiveness (ERO, 2007, 2012, 2016a, 2016b; Australian Children’s Education and Care Quality Authority (ACECQA), 2011). The links between assessment and curriculum planning and evaluation are increasingly noting the need to track or monitor children’s learning progressions or pathways to achieving curricular learning outcomes (Australian Government Department of Education and Training, 2019; NZMOE, 2017).

Using assessment to track children’s progress with an educational approach requires teachers to think carefully about the intended purpose for monitoring progress together with their local context and curriculum and select appropriate assessment tools—noting that one tool might not provide all the information that is needed. Working with the notion of progress in an educational approach also requires consideration of the facilitating context, inclusive of the pedagogical practices, and ways to examine their effectiveness. Effective teachers engage in an ongoing cycle of gathering, analysing, and using assessment and evaluation information to support children’s learning and development and strengthen curriculum implementation (Akers et al., 2015; Arthur et al., 2017; McLachlan et al., 2013a, 2013b).

Arguably, effective early childhood teachers use many types of assessment and evaluation tools for a range of purposes in their practice to ensure that children have optimal opportunities to learn. However, there is evidence in New Zealand that teachers have focussed almost exclusively on the use of learning stories with the

intent, but not always the effect, of formative assessment (Blaiklock, 2010; Cameron, 2018; Loggenberg, 2011). For example, a study by Cooper (2017) in New Zealand showed that teachers of infants and toddlers used assessment practices that both relied on and detracted from relationship-building opportunities with infants and toddlers. She found that teachers wrote learning stories that were disconnected to their practices with children because of time constraints and the demand to write the learning stories caused teachers to feel exhausted and stressed. A simple shift in assessment to using daily diaries to document learning and development instead of learning stories provided greater support for effective relational pedagogies with infants and toddlers. Recent curriculum and policy initiatives are re-broadening the focus of assessment and evaluation approaches in early childhood, including a more specific focus on progress. The history of how this evolution of practice has eventuated, and what we might expect in the coming phase is explored next.

## 2.4 The History of Assessment in Early Childhood Education in New Zealand

New Zealand has a long history in state-supported early childhood with the kindergarten movement, which began in the 1870s, being the first ECE service to be recognised by the government in the 1890s and receiving government subsidies by 1906 (May & Bethell, 2017). Over time, the diversity of services grew with services such as playcentre (1940s), education, and care (1950s), Kōhango reo<sup>2</sup> (1980s), and home-based (1990s) among others (Bushouse, 2008). The current mix of services comprises education and care (58%), kindergarten (14%), Kōhango reo (10%), playcentre (9%), and home-based services (9%) (Education Counts, 2020). Early learning is not compulsory; however, current government initiatives encourage participation in ECE settings. While children are not legally required to attend primary school until they turn six, most children start school on, or around, their fifth birthday (Peters, 2010).

### 2.4.1 1960s and 1970s: The Early Waves of Advocacy

The policy waves of ECE are explored in Bushouse (2008) who identifies the 1960s as a time of a dual or split system between kindergartens and childcare centres, with strong advocacy representing issues of quality provision, rights-based supports, and equity for children and women. Beginning in the 1970s, issues of Māori rights and social supports for families and whānau were also strong themes of advocacy. During this time, issues of curriculum and assessment were managed within each service type, guided by each service's philosophical origins and emerging theoretical

---

<sup>2</sup> Māori language nests which prioritise maintaining and strengthening Māori language and culture.



positions on development. Qualifications for teachers within these services were guided by the expectation of each service (e.g. 2-year diploma for kindergarten; 1-year certificate for childcare).

### **2.4.2 1980s: Advocacy and Reform**

The advocacy and policy waves of the 1980s and subsequent educational reforms of the 1980s moved to address issues of quality, equity, and funding, before putting a spotlight on issues of curriculum and assessment in ECE. In 1985, the governance of the childcare sector was moved from the Department of Social Welfare to the Department of Education (now Ministry of Education), to join the kindergarten and playcentre sectors. This reorganisation was designed to integrate care and education into a unified sector funded from Vote Education funds, while the funding of family financial support and social welfare became the responsibility of the Ministry of Social Development. This was a significant development, providing the financial and regulatory framework that enabled the establishment of a unified ECE sector in New Zealand (McLachlan, 2011).

Within the reforms of the 1980s, there was also a strong push for ECE to be part of the larger context of education reform at the time. The Early childhood care and education working group built upon the work of *Tomorrow's Schools* to 'provide a short restatement of the purpose, place, form, and function of early childhood education' (Department of Education, 1988a p. iv). This policy initiative resulted in *Before five: Early childhood care and education in New Zealand* and the *education to be more* documents (Department of Education, 1988b, 1988c). *Education to be more*, known generally as the Meade Report (Department of Education, 1988c), recommended a raft of changes to early childhood including quality provision, more parental choice, and adequate funding. In 1988, there was also the introduction of a 3-year Diploma of Teaching (ECE) delivered by six colleges of education for those seeking teaching qualifications.

Much has been written about the advocacy and history of ECE during this time (cf. May, 2013, 2019). It has been characterised as an exciting time of change but also disappointing in terms of the lack of equity and quality for ECE within the wider education sector. Nonetheless, initiatives from the 1990s led to many of the structures and practices still evident today. Table 2.2 outlines selected aspects of the ECE history from the beginning of the 1990s through to the present day (2021). The table outlines key initiatives and activities related to curriculum, assessment, evaluation, initial teacher education (ITE), professional learning and development (PLD), research and policy. While assessment is often driven by priorities outlined within curriculum documents, these other factors are also integral influences on teachers' everyday work and pedagogical practices. A complete description of how this selected history has impacted assessment practices is beyond the scope of this chapter, nonetheless, the table offers the broader context of influencing factors (Table 2.1).

**Table 2.1** Dimensions of quality assessment in ECE

Quality of measurement	Developmentally appropriate practice	Family involvement
<b>Utility</b> —Useful for multiple and specific purposes (e.g. screening, intervention planning, progress monitoring, evaluation)	<b>Alignment</b> —Linked to programme goals, child objectives and programming, and family priorities	<b>Collaboration</b> —Team-based decision-making, including families and professionals from multiple disciplines
<b>Technically adequate</b> —Information or scores obtained are reliable and valid for designated purpose	<b>Ongoing</b> —Assessment is conducted systematically and intentionally over time	<b>Convergence</b> —Multiple sources of information and multiple perspectives integrated to inform decision-making
<b>Quality and training of assessors</b> —Assessors have appropriate knowledge and skills to conduct assessments with young children and families	<b>Authenticity</b> —Observations of children in natural settings performing typical activities and tasks (with familiar adults and peers)	<b>Information sharing</b> —Formal and informal procedures are used share information in a family-friendly way and useful for programme planning
<b>Sensitivity</b> —Capable of assessing incremental changes and assessing child abilities with and without help	<b>Equity</b> —Responsive to individual differences in abilities, culture, or linguistic background	
<b>Congruence</b> —Methods and materials match children being assessed (e.g. norms representative, adaptations used as needed)	<b>Meaningful content</b> —Assessment focuses on functionally relevant skills for participation in familiar activities and routines	

Note Adapted from Snyder et al. (2014)

Moving forward, this chapter focuses on teacher-led, centre-based ECE (ECE) services which currently make up 72% of the services operating in New Zealand. These services operate under a single regulatory structure and include kindergartens and both privately-owned and community-based education and care services. While parent- or whānau<sup>3</sup>-led services and home-based services have been impacted by the initiatives described below, each also has its own unique history and influencing factors. These services, particularly Kōhango reo and other culturally and linguistically based services, have also had a profound impact on teacher-led, centre-based ECE services. Many of the curriculum and assessment initiatives have been designed to be inclusive of or developed in partnership with the diverse range of services across the wider ECE sector, resulting in a range of uniquely Aotearoa New Zealand bicultural approaches to ECE.

<sup>3</sup> Whānau is the Māori word for family; it denotes a wider view of family than it typical in Western cultures.

**Table 2.2** Selected history of curriculum, assessment, evaluation, and drivers of early childhood practice

Years	Curriculum	Assessment	Teaching and programme evaluation	Initial teacher education (ITE)	ECE professional learning and development (PLD)	ECE research	ECE policy
1990–1994	1990–1993 Development of Te Whāriki 1993 Draft curriculum released			c. mid-1990s, liberalisation of tertiary education—ITE programmes offered by university and non-university institutions		1992 competent children longitudinal study by NZCER begins	1990 Statement of Desirable Objectives and Practices
1995–1999	1996 release of Te Whāriki (1996)	1998 Project for Assessing Children's Experience (PACE)—development of <i>learning stories</i>	1998 Evaluating Early Childhood Programmes Using Te Whāriki project—development of <i>teaching stories</i> 1999 The Quality Journey—He Haerenga Whai Hua (programme evaluation)	1995/96 onwards introduce the 3–4 years degree qualification from approved providers	1997–2009 Ongoing MOE-funded National PLD including implementation of Te Whāriki and multiple contracts with shifting foci over time aligned with evaluation and assessment initiatives		1996 Revised Statement of Desirable Objectives and Practices (DOPs) 1998 Quality in Action: Implementing the revised DOPs

(continued)

**Table 2.2** (continued)

Years	Curriculum	Assessment	Teaching and programme evaluation	Initial teacher education (ITE)	ECE professional learning and development (PLD)	ECE research	ECE policy
2000–2004		2004–2006 Kei Tua o te Pae, Assessment for Learning: Early Childhood Exemplars released				2000 Carr et al. Action Research on Learning and Teaching Stories 2003–2009 Centres of Innovation (COI)	2002 EC Strategic Plan, Pathways to the Future: Nga Huarahi Arataki
2005–2009		2009—Final books of Kei Tua o te Pae released 2009 Te Whatu Pōkeka: Kauapapa Māori Assessment for Learning	2006 Ngā Arohaehae Whati Hua/Self-review Guidelines for Early Childhood Education introduced	c. 2005 proliferation of Graduate Diplomas of Teaching (ECE)			2008 Education (Early Childhood Services; now ECE) Regulations 2009 updates for ECE Regulations

(continued)

Table 2.2 (continued)

Years	Curriculum	Assessment	Teaching and programme evaluation	Initial teacher education (ITE)	ECE professional learning and development (PLD)	ECE research	ECE policy
2010–2014			c. 2010 Teaching as inquiry introduced and adopted within teacher appraisal systems	2010 onwardsemerging cross sector Graduate Diploma programme endorsements (ECE, primary, secondary) 2012 Introduction of the Teaching Council's Graduating Teacher Standards	2010 PLD budget cuts; MOE-funded PLD shifted to targeted approach or user-pays system		2011 updates for ECE Regulations
2015–2019	2017—Release of revised Te Whāriki (2017)		2015 Effective Internal Evaluation documents released	2019 Teaching Council updated ITE qualification requirements	2017 Online and regional PLD for refreshed curriculum 2019 He māpuna te tamaiti—Supporting social and emotional competence in early learning	2017–2019 ECE included in Teacher-led Innovation Fund (TLIF)	2015, 2016 updates for ECE Regulations 2019 Early learning action plan, He taonga te tamaiti—Every child a taonga

(continued)

Table 2.2 (continued)

Years	Curriculum	Assessment	Teaching and programme evaluation	Initial teacher education (ITE)	ECE professional learning and development (PLD)	ECE research	ECE policy
2020–present		2020 Project for children's progress tools—development of <i>Kōwhiri Whakapae</i>	2020 Te Ara Poutama—quality indicators for ECE: what matters most 2020 Teaching Council release Professional Growth Cycle framework		2020 Te kōrerero Talking together 2021 PLD-supported trial of Kōwhiri Whakapae		2021 ECE licensing criteria updates for 2008 ECE Regulations

### 2.4.3 1990s: A Period of Development—Curriculum, Assessment, and Evaluation

Beginning in the 1990s, regulatory and other guidance documents such as the *Statement of Desirable Objectives and Practices (DoPs)* (Education Gazette, 1990) and the development of a curriculum for ECE services emerged as part of the reforms signalled in the Meade Report. The 1990 DOPs introduced a range of broadly defined quality objectives for services that addressed children’s learning and development, communication and consultation with whānau and stakeholders, and centre operations and administration. Work on development of the new curriculum began in 1990, led by Helen May and Margaret Carr in partnership with Tamati Reedy and Tilly Reedy. A draft version was released in 1993. The 1993 draft curriculum was titled *Te Whāriki: He whāriki mātauranga mō ngā mokopuna o Aotearoa Draft guidelines for developmentally appropriate programmes for early childhood services*, and included a significant section exploring humanly, nationally, culturally, developmentally, individually, and educationally appropriate experiences along with specific consideration of the developmental continuum.

Research at the time suggested a very fragmented view of the role of assessment, planning, and evaluation in ECE. Researchers such as Bell (1990) and Wilks (1993) found a lack of formal or written records relating to children’s learning, with observations described as the most common approach for assessing children’s learning, followed by checklists, staff discussions, and discussions with parents. Some settings reported that assessments were mainly used if there was a need or a ‘problem’. Consistent with trends in development theory and practice, McLachlan-Smith (1996) noted there was a strong focus on providing a developmentally appropriate programme that aligned with universal, developmental norms, and notions of maturational readiness.

In 1994, Launder and Dalli explored teachers’ perspectives and understanding of the new DOP (1990) requirement to make provision for parents and families to discuss their child’s progress and be informed about their child’s daily programme. Launder and Dalli (1997) described *progress* as a potentially problematic notion as it might imply a sequential sequence for learning and development and that “teachers will not only [be expected to] cause ‘progress’ to occur, they will also [be expected to] provide evidence that it has happened” (p. 5). Launder and Dalli noted that this new requirement presupposed that teachers would have a sound knowledge of child development, a clear understanding of the links between child development and the early childhood curriculum, and sound understanding of child monitoring, assessment, and evaluation practices—suggesting this presumption was beyond the knowledge, guidance, and support available in the sector at the time.

In 1996, the final version of the curriculum, *Te Whāriki: He whāriki mātauranga mō ngā mokopuna o Aotearoa Early childhood curriculum*, was released. References to developmentally appropriate programmes in the draft were removed (except for one reference to children with special needs), and the document was grounded in the structure of four key principles for learning and development in early childhood (Empowerment—Whakamana; Holistic Development—Kotahitanga; Family

and Community—Whānau Tangata; Relationships—Ngā Hononga) and five strands, each with associated goals and learning outcomes, used as holistic and integrated areas of learning (Well-being—Mana Atua; Belonging—Mana Whenua; Contribution—Mana Tangata; Communication—Mana Reo; Exploration—Mana Aotūroa).

The 1996 curriculum included a specific focus on an ecological perspective of development. In addition, a description of development was retained that indicated “the patterns of learning and development are sometimes seen as a progressive continuum linked to age, such patterns vary for individual children in ways that are not always predictable” and often fluctuate in reference to changes in “where the child is and who they are with” (NZMoe, 1996, p. 21). While a focus on holistic development was prioritised, there was also a clear indication that adults should have knowledge and understanding of child development and Māori views on child development, including understanding the role of family and views of other cultures in the community. *Te Whāriki* defined assessment as “the process of obtaining, and interpreting, information that describes a child’s achievements and competence. The purpose of assessment is to provide pertinent information to contribute to improving learning opportunities for children” (NZMoe, 1996, p. 99). The following approach to assessment was described:

The purpose of assessment is to give useful information about children’s learning and development to the adults providing the programme and to children and their families. Assessment of children’s learning and development involves intelligent observation by experienced and knowledgeable adults for the purpose of improving the programme. Assessment occurs minute by minute as adults listen, watch, and interact with a child or with groups of children. These continuous observations provide the basis of information for more in-depth assessment and evaluation that is integral to making decisions on how best to meet children’s needs. In-depth assessment requires adults to observe changes in children’s behaviour and learning and to link these to learning goals. Assessment contributes to evaluation, revision, and development of programmes. (NZMoe, 1996, p. 29)

There was further advice on including children in assessing their own learning, avoiding comparisons between children, or generalising from snapshots or individual pieces of information, and ensuring assessment was undertaken in accordance with the curriculum’s principles and focussed on the goals of each curriculum strand. Learning outcomes were described as the knowledge, skills, and attitudes that “... combine together to help the child develop dispositions [habits of mind or patterns of learning] that encourage learning” (p. 44).

*Te Whāriki* (NZMoe, 1996) has been described as a curriculum of ‘open possibilities’ (Dalli, 2011) where teachers are responsive to children and their interests as they emerge. Assessment was positioned as formative in nature, but *Te Whāriki* only named observation as an assessment method without further clarification, as teachers were expected to make decisions in the moment about when and how to support learning. Because *Te Whāriki* is not a prescriptive curriculum and the guidance provided includes intentionally broad statements of principles for practice, implementation requires skilled, knowledgeable teachers, something which the authors of *Te Whāriki* noted could be a challenge for the sector (Carr & May, 1993).



Although *Te Whāriki* was one of the first early childhood curricula internationally to include infants and toddlers for a birth through five approach to curriculum, over time ERO reviews have identified that these age groups are particularly difficult for teachers to serve well in terms of curriculum, pedagogy, assessment and evaluation (ERO, 2015).

In 1996, the Revised Statement of Desirable Objectives and Practices (DOPs) was also released. The revised DOPs (Education Gazette, 1996) and the supporting implementation guidance released in 1998 through *Quality in Action: Te Mahia Whai Hua* (NZMOE, 1998) were aligned with the guidance and expectations for teaching and learning as described in *Te Whāriki*. The DOP related to children's progress was revised to: "discuss, both informally and formally, their child's progress, interests, abilities, and areas for development on a regular basis, sharing specific observation-based evidence" (Education Gazette, 1996). Notably, there was no reference to children's progress in *Te Whāriki* (NZMOE, 1996); rather the focus was on "planning... from observations of the children's interests, strengths, needs, and behaviours" (p. 28).

In 1995, while *Te Whāriki* was being piloted, Margaret Carr and colleagues began a NZMOE-funded *Project for Assessing Children's Experiences in Early Childhood* (PACE), to develop a range of assessment ideas and procedures for the new curriculum with a focus on children aged three and four (Carr, 1998a, 1998b; Podmore & Carr, 1999). A formative approach to assessment was adopted, designed to align with *Te Whāriki's* sociocultural and ecological theoretical underpinnings. The project developed a narrative approach to documenting children's dispositions and learning, using 'Learning Stories'. Assessment information was intended to be gathered through observations described as being open-ended and focussed, using a process of *notice, recognise, and respond*, later revised to *describing, documenting, discussing, and deciding*. However, the terminology of *notice, recognise, and respond* has persisted over time. Following their observations, teachers document children's learning by writing learning stories that exemplified children's developing dispositions within the context of the learning environment and included possibilities for the next steps of learning. Photographs or examples of children's work could be included in the learning stories. The stories were to be shared with families who would be invited to contribute their view of their child's learning. Children's progress would be evident as these stories became longer, wider, and more complex over time (Carr, 1998a). In the final report to the Ministry, Carr (1998a) specifically noted that "The largest part of assessment practice in early childhood is the informal, undocumented, and intuitive responses to children by adults" (p. 37). This notion of assessment being informal, undocumented, and intuitive signalled the beginning of an approach to assessment which has influenced ECE in New Zealand for the last 20 years.

While the history of learning stories and its origins are more broadly documented, the simultaneous focus on evaluation is often not described in this history. At the same time, Margaret Carr was leading the PACE project, Podmore and May, with Mara (1998) were leading a programme to develop an evaluation framework through the project titled *Evaluating Early Childhood Programmes Using the Strands and Goals of Te Whāriki, the National Early Childhood Curriculum*. This project aimed

to identify the key elements of programme quality in relation to the strands and goals of *Te Whāriki* and design a cohesive framework for evaluating curriculum implementation.

The two projects were interwoven, and a robust assessment and evaluation framework proposed, comprised of *learning stories* and *teaching stories* (cf. Carr et al., 1998). To explore this integrated framework, they undertook an action research project to trial the linked assessment and evaluation framework through the use of learning and teaching stories. The project emphasised using a range of locally developed evaluation and assessment strategies and collection tools to answer these questions. Likely guided by the influence of Podmore (cf. Podmore, 2006), many of the tools focussed on structured and semi-structured observations that generated quantitative and qualitative data.

In addition to the work on learning and teaching stories, the *Quality Journey/He Haerenga Whai Hua: improving quality in Early Childhood Services* (Ministry of Education, 1999) was also released in 1998 to assist early childhood services in New Zealand to develop quality improvement systems and undertake quality reviews. The project, led by Anne Meade and Anne Kerslake Hendricks, was aligned with the 1996 DOPs and offered guidance on quality review processes. The approach outlined a process for measuring practice against quality indicators using a quantitative scale of quality. The process was viewed as too complex and time-consuming for services without the skills to design and implement such systems (McLachlan & Grey, 2013) and was later replaced by the 2006 guidelines for self-review for ECE: *Ngā Arohaehae Whai Hua* (NZMOE, 2006). The self-review guidelines outlined a general process of preparing, gathering information, making sense of information, and making decisions in order to bring about improvement.

#### **2.4.4 2000s Settling into a New Approach to Curriculum and Assessment**

Shortly after the research on learning and teaching stories and the release of *Quality Journey*, the first book on learning stories was published by Carr (2001)—*Assessment in early childhood settings: Learning stories*—and teachers enthusiastically focussed on and adopted the learning story framework (Carr et al., 2002a, 2002b). Carr (2001) acknowledged that learning stories are time-consuming, requiring not just the gathering and documenting of assessment information, but also consultation, analysis of the information gathered, and the development of a plan for ongoing learning. Focussing on the work from the PACE project and emphasising teachers' enthusiasm for learning stories, the NZMOE next funded the development of a set of exemplars for teachers for writing learning stories: *Kei Tua o te Pae/Assessment for Learning: Early Childhood Exemplars* (NZMOE, 2004/2009). Formative assessment was a fundamental principle in this resource, focussed on noticing, recognising, and responding and making visible learning that is valued. Over time, a series of 20

resource books were released, including books focussed on assessment generally (Books 1–9), assessment on the strands of *Te Whāriki* (books 10–15), and assessment on curricular domain knowledge (e.g. language, literacy, maths, arts, ICT; books 16–20). Of significance, the books include Book 8 which is specifically focussed on assessment of infants and toddlers, which is relatively rare and important to address, given their unique learning needs (Akers et al., 2015).

The roll out of the curriculum, learning stories framework, and *Kei Tua o te Pae*, was supported through Ministry-funded national PLD programmes; however, these programmes catered for a sector with a diverse range of experiences and qualification pathways across service types. This presented a potential mismatch between the sophistication of the curriculum and assessment processes and the capabilities of the workforce, which may have been amplified by the diminished focus on evaluation.

In 2002, the *Early Childhood Strategic Plan, Pathways to the Future: Nga Huarahi Arataki* (NZMOE, 2002) was released. *Pathways to the Future* (NZMOE, 2002) outlined three broad goals related to promoting participation in ECE; improving the quality of ECE; and enhancing collaborative relationships among services and stakeholders in early childhood. The plan proposed the move to a fully qualified workforce to support quality practice and included development of the Centre of Innovation (COI) programme to promote sector based research to enhance teaching and learning practices. Between 2003 and 2009, a limited number of ECE services applied for and were selected, with research partners, to further develop and research their existing innovative practice and to disseminate information about their innovation and the outcomes of their research. The aims and areas of inquiry for COIs were broadly focussed, however, in their evaluation of the COI programme, Gibbs and Poskitt (2009) noted that while participating teachers enhanced their own skills at writing meaningful narratives about children's learning, including infants and toddlers, there were no other forms of assessment and a lack of evaluation information about curriculum implementation and programme innovations. The evaluators suggested there was a clear need for rigorous processes to yield trustworthy and useful data to measure the impact of the programme on children, beyond anecdotal evidence and individual stories.

Around 2003, there was also an increasing interest in the development of assessment approaches from a kaupapa Māori perspective, resulting in the release of *Te Whatu Pōkeka* kaupapa Māori assessment for learning early childhood exemplars in 2009. The project was led by Lesley Rameka, with the support of project kaumātua Te Ariki Mōrehu and Waiariki Grace and a range of collaborators and colleagues. The principal focus of the project was to build on the values, philosophies, and practices of Māori early childhood settings to promote kaupapa Māori assessment for Māori children (NZMOE, 2009). The resource aimed to move assessment understandings and practices beyond culturally responsive perspectives of learning, to learning and learners being seen as deeply located and embedded within Māori ways of knowing and being to make a difference for Māori children (Rameka, 2012). An interpretation of the tauparapara<sup>4</sup> was used to represent the notion of growth, development, and

---

<sup>4</sup> Incantation to begin a speech.

learning, with themes common across Māori creation stories. Three generic phases of learning and growing were highlighted: Mōhiotanga, Mātauranga, and Māramatanga. These phases (NZMOE, 2009, p. 49) are described as:

Mōhiotanga—What a child already knows and what they bring with them highlights new beginnings, new knowledge, and new discoveries. *Te kore, te pō.*

Mātauranga—This is a time of growth for the child. It denotes a phase of increasing potential, negotiation, challenge, and apprehension when dealing with new ideas. *Te kukune, te pupuke, te hihiri, te mahara, te manako.*

Māramatanga—This is when a child comes to understand new knowledge: a phase of enlightenment, realisation, and clarification. *Te mahara, te Hinengaro, te manako, te wānanga, te whē, te ao mārama.*

Assessments for learning using this lens were often presented in narrative format, written in te reo Māori, with the inclusion of photographs. While *Te Whatu Pōkeka* was designed for Māori early childhood settings and written in te reo Māori, an English version was made available to all ECE services to strengthen their understanding of bicultural assessment practices.

#### 2.4.5 2010s A Decline in Investment

In many ways the end of 2009 capped the period of rapid change and investment in early childhood services (McLachlan et al., 2018). In 2008, the early childhood regulations replaced the DOPs, and updated the licensing process and the minimum standards for all ECE centres. In 2010, an independent advisory taskforce on ECE was convened with their report, *An Agenda for Amazing Children*, released in 2011 (ECE Taskforce, 2011). The report suggested a range of bold initiatives to focus on and improve quality even during times of fiscal pressures. The incoming conservative National government prioritised increasing access and participation rates and focussed on targeted support for priority learners (i.e. those viewed at risk; May & Carr, 2015), while simultaneously reducing funding rates for services, redacting the move towards a fully qualified workforce, cancelling the COI programme, and winding back NZMOE-funded PLD provision.

Thus began a period of decline in government support for ECE, including in the development of new resources and innovations, funding for PLD, and government-funded research focussed on ECE. Over time, ERO reviews (2007, 2009, 2011, 2013) suggest that New Zealand teachers had difficulties planning for and implementing the curriculum; often used narrative methods of assessment such as learning stories poorly; and did not use or understand appropriate evaluation practices. It is important to note that difficulty with planning, assessment, curriculum implementation, and evaluation was not necessarily predicted by qualification levels. New innovations in the sector were led by private organisations, including the proliferation of services for online portfolios. While these web-based systems are viewed as popular among teachers and parents and offer new options for sharing information, including video,

with families, the resulting impact on the quality of assessment practices has been questioned (Hooker, 2016).

In general, learning stories as an approach to assessment are widely held in high regard by researchers and teachers alike, and offer many important strengths and contributions to assessment practices in ECE. At the same time, the approach (or dominance of it) has also come under fire with a range of concerns and criticisms described. These have included the focus on informal methods of observation; problems with defining and observing particular learning dispositions across the age range of 0–5 years; difficulty demonstrating changes in children’s learning over time; confusion about where, when, and how often to record learning stories; the amount of time required to complete the assessment process with integrity; the focus on children’s strengths, which has been problematic for noticing when children might need extra support; the appropriateness of the approach for culturally and linguistically based services or for services with families with limited English; and the exclusive use of learning stories to exclusion of other forms of assessment (Blaiklock, 2008, 2013; Cameron, 2018; Caulcutt & Paki, 2011; Cooper, 2017; Hazard, 2011; Lim, 2012; Loggenberg, 2011; McLachlan & Arrow, 2014; Miller, 2014; Perkins, 2013; Zhang, 2015, 2017). Zhang (2015) commented that “regardless of the appeal of learning stories, this approach should not be promoted as the only or best assessment practice. Educators, parents and children should be provided with choices, and a more multi-method or comprehensive approach taken to assessment” (p. 67).

#### **2.4.6 A New Era: Curriculum Refresh and Reinvestment in Early Learning**

After more than 20 years, the new Labour government initiated a refresh of the early childhood curriculum. *Te Whāriki* retained the principles, strands and goals but, according to McLachlan (2017) who was a member of the writing team, “This is ‘not business as usual with a bright new cover’! The revision recognises and reflects societal changes in the last 20 years, as well as shifts in government policy and considerable research around curriculum, assessment, pedagogy and practice.” (p. 8). Notable updates included the move to ‘one curriculum—two pathways’—one pathway for *Te Whāriki: He whāriki mātauranga mō ngā mokopuna o Aotearoa early childhood curriculum* which is for use by all ECE services and a second pathway for *Te Whāriki a te Kōhanga Reo* which is for use in all kōhanga reo affiliated to Te Kōhanga Reo National Trust. The document is presented as a one-framework-two-paths curriculum in which “both pathways are of equal status and have mana in their own right. Neither part of the combined document is a translation of the other” (NZMOE, 2017, p. 69).

Within *Te Whāriki* (2017): *He whāriki mātauranga* there is also an increased imperative to address the role of language, culture, and identity as teachers actively weave (and enact) a bicultural curriculum in ECE settings. There is a significant

reduction in the number of learning outcomes: from 118 to just 20. It is specifically noted that learning outcomes “are designed to inform curriculum planning and evaluation and to support the assessment of children’s progress” (p. 16). A new section called ‘kaiako<sup>5</sup> responsibilities’ has been added, with an increased focus on kaiako being portrayed as ‘intentional’ and ‘active’ in children’s learning. This section also outlines knowledge and capabilities that teachers are expected to possess in order to effectively implement the curriculum, including knowledge of children’s development and curricular domain knowledge.

The focus on curriculum implementation includes using the framework as the basis for developing and implementing local curriculum. The revised *Te Whāriki* (NZMOE, 2017) also offers new guidance on assessment:

Assessment makes valued learning visible. Kaiako use assessment to find out about what children know and can do, what interests them, how they are progressing, what new learning opportunities are suggested, and where additional support may be required. Understood in this way, assessment is formative, intended to support curriculum planning, and enhance learning. It is also useful for informing children, whānau and families, other kaiako and external support agencies about children’s learning and progress over time. ... Assessment is both informal and formal. Informal assessment occurs in the moment as kaiako listen to, observe, participate with, and respond to children who are engaged in everyday experiences and events. More formal, documented assessment takes place when kaiako write up observations of children’s engagement with the curriculum. By analysing such assessment information, gathered over time, kaiako are able to track changes in children’s capabilities, consider possible pathways for learning, and plan to support these. (NZMOE, 2017, p. 63)

A key shift in the description is that “useful information about children’s learning and development” from the 1996 version has been expanded to be specific about what constitutes useful information, with a list of five different types of information that are needed. The basic core of observation as foundational to ECE assessment is maintained; however, the revised version offers multiple ways in which observations might be gathered and documented that extend beyond the dominant learning stories approach. Key tenets of ideas on development are retained but expanded to offer teachers more guidance that supports and encourages teachers to both be knowledgeable about sequences of development (i.e. “typical characteristics and patterns that can be observed in the years from birth to school entry” (NZMOE, 2017, p. 13) while recognising and appreciating children’s unique learning trajectories and fluctuating capabilities which are influenced by their social and cultural context.

To support teachers’ awareness and knowledge of the refreshed curriculum and its expectations, an online and regionally based PLD initiative was rolled out. A new platform, *Te Whāriki Online*, was hosted on Te Kete Ipurangi (TKI), New Zealand’s online education portal supported by NZMOE. This was the first time ECE had a specific presence on the historically school-based platform. In addition to web-based resources and webinars, regionally based ‘curriculum champions’ were used to support local learning. Successive ERO reports (2018a, 2018b, 2019) following the release of the curriculum have suggested poor engagement with the refreshed

---

<sup>5</sup> Teachers and educators.

curriculum with less than half of ECE services prepared to implement the refreshed curriculum by 2019.

At the same time, the refreshed curriculum was released, and the Teacher-led Innovation Fund (TLIF) became available to ECE services in 2017. Initially designed to support school-based teacher innovation and inquiry, the first ECE settings received funding in 2018. The teacher inquiry design of the TLIF, together with the use of external experts, meant a strong focus on ensuring adequate data to measure impact on teacher practice and child income. Projects were expected to adapt or develop and use local data tools as part of their innovation (see Chaps. 13 and 14 for examples).

Also in 2017, the government's science advisors, Professors McNaughton and Gluckman released a briefing paper to the Secretary of Education titled: *Children in the preschool years: areas of development and implications for measurement*. The document outlined five selected areas of children's development (self-control, interpersonal skills, language, emergent literacy, and early numeracy and mathematics) that should not be left to chance, and which required identification of markers of progress. Their description of these areas focussed on skills, which was viewed as compatible with dispositions and capabilities described by curriculum. Their report specifically recommended developing a national approach to measuring these areas of development for children aged three to five years. The authors noted they had "not addressed how the areas relate to culturally specific expressions", nonetheless, the paper was "intended as a basis for the Ministry of Education to develop ways of measuring the skills, appropriate for communities in New Zealand and with due consideration of cultural distinctions" (McNaughton & Gluckman, 2019, p. 4).

This focus on assessing or measuring progress was also picked up in the new *Early Learning Action Plan* (ELAP; NZMOE, 2019). The draft plan included an action focussed on co-constructing progress tools to support children's learning and well-being. Sector feedback on the plan suggested that there was both excitement and trepidation about this proposal, with clear feedback that the tools should be used as formative assessments and not for other purposes such as accountability (Jenkins, 2019). In the final 2019 *Early Learning Action Plan, He taonga te tamaiti—Every child a taonga* (NZMOE, 2019) action 4.2 focussed on the co-construction of a range of tools to support formative assessment and teaching practice, ensuring they could provide information that was valid, reliable, culturally and linguistically appropriate. The description of the action specifically notes that "Teachers and educators attend to progress in order to identify ways to deepen or strengthen children's learning. Teachers also monitor their own practice and seek to improve it" (p. 30). The *ELAP* also included other significant actions to support quality provision, improve equity, enhance parental choice, and provide adequate funding in ECE including the return of 100% qualified workforce targets, addressing issues of pay parity, improving teacher-child ratios for children under three, and reinvestment in PLD and research. Movement on these initiatives was laid out over a 10-year timeframe with short-term, medium-term, and long-term objectives (NZMOE, 2019).

One of the first items for action was the development of the progress tools. In July 2020, the NZMOE released the request for proposals for *Tools to support kaiako understanding of children's progress in early learning (initial stage)*. A project team



led by Tara McLaughlin and Sue Cherrington, in collaboration with a wider project team, project critical friends and a sector reference group, undertook the development work and piloting for the new set of tools. Guidance from the NZMOE indicated the tools should help teachers understand what individual children's progress looks like over time and adjust their teaching practices to support individual children's progress; use evidence to discuss children's progress with families and colleagues and recognise when additional support may be needed; and reflect on their own teaching practice to identify areas they may need to strengthen to better support children's progress and design high quality curricula. There was no specific guidance on the inclusion of infants and toddlers. Further guidance from the NZMOE indicated that the tools were not intended to measure children in ways that produced aggregated quantitative data or to compare children. The Ministry also indicated that the tools are optional and there are no requirements for services to use them.

The resulting tools were titled, *Kōwhiri Whakapae: draft practice and progress tools to support competent and confident kaiako and mokopuna* (NZMOE, 2021a). The project team was charged with designing an overall framework for the tools and developing the social-emotional learning and development tools. Further tools in other learning areas are planned (NZMOE, 2021a, b). The draft *Kōwhiri Whakapae* framework draws on the principles of Te Tiriti o Waitangi<sup>6</sup> and prioritises a focus on culture, language, and identity consistent with *Te Whāriki* (NZMOE, 2017). It also positions the importance of examining practice ahead of progress so that teachers are concurrently considering their contributions to children's learning and the learning supports they might provide in the light of their assessment of children's learning and development. It provides specific statements of practice for teachers to self-evaluate and signposts that describe key aspects of children's learning from birth through five, while encouraging the integration of local practices and views of children's learning. *Kōwhiri Whakapae* (draft) indicates that these are one set of tools to support focussed observation and tracking progress in key areas of learning and should be used in conjunction with other assessment tools and approaches, including the use of learning stories. Following the initial development work, a NZMOE-funded PLD-supported trial of these tools took place from November 2021 to May 2022 to evaluate the effectiveness of *Kōwhiri Whakapae* (draft) within a programme of professional learning and development (NZMOE, 2021a, b). Results from the trial were not available at the time of writing this chapter.

There has also been a flurry of new Ministry developed resources for early learning. In 2019 *He māpuna te tamaiti—Supporting social and emotional competence in early learning* was released, followed in 2020, by *Te kōrerorero Talking together*, which focussed on supporting children's language development. The learning and development content in both these resources and *Kōwhiri Whakapae* are organised in key areas associated with social-emotional or language learning and development from diverse cultural perspectives and designed to show how these areas are connected across the strands of *Te Whāriki* and reflected in multiple learning outcomes given the holistic nature of the strands. The intent of these resources and

---

<sup>6</sup> The Treaty of Waitangi, signed in 1840 between the Crown and Māori.



tools is to strengthen teachers' knowledge in these areas in order to support them to weave this knowledge into their local curriculum and implementation of *Te Whāriki*.

Returning to the *ELAP*, there is also a specific action focussed on programme evaluation. *ELAP* Action 4.3 describes the need to support services to undertake robust internal evaluation strengthen implementation of *Te Whāriki* and ensure ongoing improvement (NZMOE, 2019). This action item is connected with ERO's new framework, *Te Ara Poutama—quality indicators for ECE: what matters most*, released in 2020. The new system begins with basic regulatory assurance reviews and then differentiates the quality reviews based on services' maturity and performance, working in a structure that encourages services to go beyond minimum standards and strive for quality, equity, and continual improvement.

With the refreshed curriculum, the *ELAP*, a refreshed focus on assessment and evaluation, and increasing investment in ECE resources and supports, ECE in Aotearoa New Zealand is entering a new phase. Notably, many of the same core issues of quality provision and equity from the 1980s and 1990s reforms, including the importance of quality curriculum, assessment and evaluation; the knowledge and capabilities of the workforce; culturally responsive and culturally designed pedagogy; and access to appropriate guidance, resources and PLD continue to be themes of this new era.

## 2.5 Moving Forward: Settling into Equilibrium

As can be seen in the selected history we've described, perspectives over time have often swung from an either/or view of subjective or objective assessment, frequently in line with varying views of learning and development. The extremes of this pendulum swing are problematic and poor practice (and poor outcomes for children) can exist in each extreme. A more curious aspect of this history has been the emphasis on assessment with limited focus on teaching evaluation and mixed success with programme evaluation. A focus on assessment without an equally clear focus on evaluation is as concerning as an exclusive focus on learning without a focus on teaching, an issue which has also been voiced as a concern of the ECE sector over time (cf. Cherrington, 2011; Cullen, 1996, 1999; Meade, 2002; McLaughlin et al., 2016).

Rather than continuing to have a swinging pendulum, there is a need for a balanced and integrated view which allows for more nuanced understandings and responsive practices, informed by teaching and learning relationships that are reciprocal and mutually beneficial. While many of the themes of the past are seemingly repeated, we hope the lessons learned along the way prevent the pendulum from swinging wildly. It is time to create a period of equilibrium and balance, in which learning and teaching, assessment and evaluation are valued. This balance can be enabled through the use of a range of subjective and objective tools to explore and support children's progress towards important learning, within and across the learning outcomes of *Te*

*Whāriki*. This balance must always be guided by the principles of *Te Whāriki* and always in recognition of each child's unique culture, language, and identity.

## 2.6 Conclusion

Assessment of children's learning and development is a cornerstone of ECE, and the complexities of what to assess, why, and how are often influenced by practices and perspectives described in curriculum documents together with other factors such as evaluation, ITE, PLD, research, and policy. The New Zealand case demonstrated an imbalance in assessment practices with the emergence of one approach to assessment dominating over time. This dominance paired with a diminishing focus on evaluation and declining investment in ECE, resulted in a sector stagnating in quality and innovation before a new or refreshed era of change has been ushered in with government investment, policy initiatives and a curriculum update. Implications of this next chapter in the New Zealand ECE history are still unknown. Nonetheless, the example of New Zealand may enable those within and outside this context to consider how the range of complexities and influences have affected their own policies and practices.

While New Zealand ECE settings have historically favoured a formative approach to assessment, the renewed focus on tracking children's learning progressions or pathways to achieving curricular learning outcomes may also serve summative, diagnostic, or ipsative purposes, depending on the audience such as parents, teachers, and policymakers. Regardless of the specific approach to assessment, sound knowledge of assessment quality dimensions and processes that are fit for purpose is essential for teachers to engage in effective and balanced assessment and evaluation practices. Such knowledge should support teachers to use a range of methods for gathering information, as well as being confident and competent in analysing the information gathered and then using that information to benefit children.

## References

- Akers, L., Del Grosso, P., Atkins-Burnett, S., Monahan, S., Boller, K., Carta, J., & A. Wasik, B. (2015). *Research brief—Tailored teaching: The need for stronger evidence about early childhood teachers' use of ongoing assessment to individualize instruction*. Research Brief OPRE Report #2015-59. Mathematica Policy Research.
- Arthur, L., Beecher, B., Death, E., Dockett, S., & Farmer, S. (2017). *Programming and planning in early childhood settings*. Cengage AU.
- Australian Children's Education and Care Quality Authority (ACECQA). (2011). *Guide to the national quality standard*. <https://www.acecqa.gov.au/sites/default/files/acecqa/files/National-Quality-Framework-Resources-Kit/NQF-Resource-03-Guide-to-NQS.pdf>
- Australian Government Department of Education and Training. (2019). *Belonging, being & becoming—The early years learning framework for Australia*. <https://www.dese.gov.au/child-care-package/resources/belonging-being-becoming-early-years-learning-framework-australia>

- Bagnato, S. J. (2007). *Authentic assessment for early childhood intervention. Best practices*. The Guilford Press.
- Bagnato, S. J., Goins, D. D., Pretti-Frontczak, K., & Neisworth, J. T. (2014). Authentic assessment as “best practice” for early childhood intervention: National consumer social validity research. *Topics in Early Childhood Special Education, 34*, 116–127.
- Bell, N. N. (1990). *Theorising practice in early childhood education* (Master of Arts in Education), Massey University, Palmerston North, New Zealand.
- Bernstein, B. (1996). *Pedagogy, symbolic control, and identity: Theory research, critique*. Taylor and Francis.
- Blaiklock, K. E. (2008). A critique of the use of learning stories to assess the learning dispositions of young children. *New Zealand Research in Early Childhood Education, 11*, 77–87.
- Blaiklock, K. E. (2010). Assessment in New Zealand early childhood settings: A proposal to change from learning stories to learning notes. *Early Education, 48*, 5–10.
- Blaiklock, K. E. (2013). What are children learning in early childhood education in New Zealand? *Australasian Journal of Early Childhood, 38*, 51–56.
- Bowman, B., Donovan, S., & Burns, S. (2001). *Eager to learn: Educating our pre-schoolers. Report of committee on early childhood pedagogy*. Commission on Behavioural and Social Sciences and Education National Research Council. Washington, DC: National Academy Press.
- Brassard, M. R., & Boehm, A. E. (2007). *Preschool assessment: Principles and practices*. Guilford.
- Brown, G. T. (2004). Teachers’ conceptions of assessment: Implications for policy and professional development. *Assessment in Education: Principles, Policy & Practice, 11*(3), 301–318.
- Bushouse, B. K. (2008). *Early childhood education policy in Aotearoa/New Zealand: The creation of the 20 hours free programme*. Fulbright New Zealand.
- Cameron, M. (2018). *Assessing four-year-old children’s learning: New Zealand early childhood teachers’ purposes, practices and beliefs* (Doctor of Education). Massey University, Palmerston North, New Zealand.
- Carr, M., & May, H. (1993). Choosing a model: Reflecting on the development process of Te Whāriki: National Early Childhood Curriculum Guidelines in New Zealand. *International Journal of Early Years Education, 1*(3), 7–22.
- Carr, M., May, H., Podmore, V. N., Cubey, P., Hatherly, A., & Macartney, B. (2002b). Learning and teaching stories: Action research on evaluation in early childhood in Aotearoa-New Zealand. *European Early Childhood Education Research Journal, 10*, 115–125.
- Carr, M., May, H., & Podmore, V. (1998). *Learning and teaching stories: New approaches to assessment and evaluation in relation to Te Whariki*. Paper presented at the Symposium for the European Conference on Quality in Early Childhood Settings (8th), Santiago, Spain.
- Carr, M., Hatherly, A., Lee, W., & Ramsey, K. (2002a). Te Whāriki and assessment: A case study of teacher change. In J. Nuttall (Ed.), *Weaving Te Whāriki. Aotearoa New Zealand’s early childhood curriculum document in theory and practice* (pp. 187–214). New Zealand Council for Education Research.
- Carr, M. (1998a). *Assessing children’s experiences in early childhood. Final report to the Ministry of Education. Part one*. Ministry of Education.
- Carr, M. (1998b). *Assessing children’s learning in early childhood settings. A professional development programme for discussion and reflection. Support booklet for videos: What to assess? Why assess? How to assess?* New Zealand Council for Educational Research.
- Carr, M. (2001). *Assessment in early childhood settings: Learning stories*. Paul Chapman Publishing.
- Caulcutt, T., & Paki, V. (2011). How aligned are we? Assessment procedures and practices between early childhood and early intervention. *Kairaranga, 12*(2), 36–41.
- Cherrington, S. (2011). *Early childhood teachers’ thinking and reflection within their community of practice* (Doctor of Philosophy), Victoria University of Wellington, New Zealand.
- Cleverley, J. F., & Phillips, D. C. (1986). *Visions of childhood: Influential models from Locke to Spock*. Teachers College Press.
- Cooper, M. (2017). Reframing assessment: Reconceptualising relationships and acknowledging emotional labour. *Contemporary Issues in Early Childhood, 18*(4), 375–386.

- Crooks, T. J. (1988). The impact of classroom evaluation practices on students. *Review of Educational Research*, 58(4), 438–481.
- Cullen, J. (1996). The challenge of Te Whāriki for future developments in early childhood education. *Delta*, 48(1), 113–126.
- Cullen, J. (1999). Children's knowledge, teachers' knowledge: Implications for early childhood teacher education. *Australian Journal of Teacher Education*, 24(2), 15–25.
- Dalli, C. (2011). A curriculum of open possibilities: A New Zealand kindergarten teacher's view of professional practice. *Early Years*, 31(3), 229–243. <https://doi.org/10.1080/09575146.2011.604841>
- Department for Education United Kingdom. (2017). *Statutory framework for the early years foundation stage: Setting the standards for learning, development and care for children from birth to five*. <https://www.gov.uk/government/publications/early-years-foundation-stage-framework--2>
- Department of Education. (1988a). *Tomorrow's schools. The reform of education administration in New Zealand*. Author.
- Department of Education. (1988b). *Before five: Early childhood care and education in New Zealand*. Author.
- Department of Education. (1988c). *Education to be more: Report of the Early Childhood Care and Education Working Group*. Author.
- Department of Education, Employment and Workforce Relations (DWEER). (2009). *Belonging, being and becoming. The early years learning framework for Australia*. <https://www.dese.gov.au/national-quality-framework-early-childhood-education-and-care-0/earlyyearslearningframework>
- Drummond, M. J. (2012). *Assessing children's learning* (Classic ed.). Routledge.
- ECE Taskforce. (2011). *An agenda for amazing children: Final report of the ECE Taskforce*. Ministry of Education. Author.
- Education Counts. (2020). *Licensed early learning services*. [https://www.educationcounts.govt.nz/\\_data/assets/pdf\\_file/0020/205841/Licensed-Early-Learning-Services.pdf](https://www.educationcounts.govt.nz/_data/assets/pdf_file/0020/205841/Licensed-Early-Learning-Services.pdf)
- Education Gazette. (1990). *Early childhood charter guidelines: A statement of desirable objectives and practices. A supplement to the Education Gazette*. Author
- Education Review Office. (2007). *The quality of assessment in early childhood education*. Author.
- Education Review Office. (2009). *Implementing self review in early childhood services*. Author.
- Education Review Office. (2011). *Literacy in early childhood services: Teaching and learning*. Author.
- Education Review Office. (2012). *The New Zealand curriculum principles: Foundations for curriculum decision-making*. Author.
- Education Review Office. (2013). *Priorities for children's learning in early childhood services*. Author.
- Education Review Office. (2015). *Infants and toddlers: Competent and confident communicators and explorers*. Author.
- Education Review Office. (2016a). *Early learning curriculum*. Author.
- Education Review Office. (2016b). *Effective Internal Evaluation for Improvement*. Author.
- Education Review Office. (2018a). *Awareness and confidence to work with Te Whāriki*. Author.
- Education Review Office. (2018b). *Engaging with Te Whāriki 2017*. Wellington, New Zealand: Author.
- Education Review Office. (2019). *Preparedness to implement Te Whāriki*. Author.
- Education Review Office. (2020). *Te ara Poutama: Pike ake, kake ake: For those who aspire to seek excellence: Indicators of quality for early childhood education: What matters most*.
- Featherstone, S. (2011). *Catching them at it: Assessment in the early years*. A & C Black Publishers.
- Gibbs, R., & Poskitt, J. (2009). *Report on the evaluation of the early childhood Centres of Innovation programme*. Evaluation Associates Ltd.
- Hazard, H. (2011). Learning stories: One way to assess and report—Professionals and children working together. *Every Child*, 17(3), 14–15.

- Hipkins, R. (2007). *Assessing key competencies: Why would we? How could we?* [https://www.nzcer.org.nz/system/files/Key\\_Competencies.pdf](https://www.nzcer.org.nz/system/files/Key_Competencies.pdf)
- Hooker, T. A. (2016). *Adults and children engaging with ePortfolios in an early childhood education setting* (Doctor of Philosophy in Education), The University of Waikato.
- Jenkins, M. (2019). *The Kōrero Mātauranga: Draft early learning strategic plan submission analysis*. <https://www.education.govt.nz/assets/Documents/ELAP/Appendix-1-Korero-Matauranga-Draft-Early-Learning-Strategic-Plan-Submissions.pdf>
- Lauder, D., & Dalli, C. (1997). *How is my child doing? Selected case studies of how childcare centres meet the DOPs requirement to discuss children's progress with parents*. Occasional Paper No. 2, Institute for Early Childhood Studies, Victoria University of Wellington.
- Lim, R. (2012). *Making mathematics learning visible: Supporting, documenting, and assessing children's mathematical learning in kindergarten*. Paper presented at the New Zealand Association for Research in Education, Hamilton, New Zealand.
- Loggenberg, E. M. (2011). *Assessment in early childhood education in New Zealand* (Masters in Educational Psychology Unpublished thesis), Massey University, Albany, New Zealand. Retrieved from <http://hdl.handle.net/10179/3421>
- Luff, P. (2012). Challenging assessment. In J. Moyles & T. Papatheodorou (Eds.), *Cross-cultural perspectives on early childhood* (pp. 140–150). Sage.
- May, H., & Bethell, K. (2017). *Growing a kindergarten movement in Aotearoa New Zealand: Its people, purposes and politics*. NZCER Press.
- May, H., & Carr, M. (2015). Te Whāriki: A uniquely woven curriculum shaping policy, pedagogy and practice in Aotearoa New Zealand. In T. David, K. Gouoch, & S. Powell (Eds.), *The international handbook of philosophies and theories of early childhood education and care* (pp. 340–350). Routledge.
- May, H. (2013). *The discovery of early childhood education*. NZCER press.
- May, H. (2019). *Politics in the playground: The world of early childhood in Aotearoa New Zealand*. Otago University Press.
- McLachlan, C. (2011). An analysis of New Zealand's changing history, policies and approaches to early childhood education. *Australasian Journal of Early Childhood*, 36(3), 36–44.
- McLachlan, C. (2017). 'Not business as usual'. Reflections on the 2017 update of Te Whāriki. *Early Education*, 62(Spring/Summer), 8–14.
- McLachlan, C. J. & Arrow, A. W. (2014). Promoting alphabet knowledge and phonological awareness in low socioeconomic child care settings: A quasi experimental study in five New Zealand centres. *Reading and Writing*, 27, 819–839. DOI: <https://doi.org/10.1007/s11145-013-9467-y>
- McLachlan, C., & Grey, A. (2013). "It's just part of being a professional": Looking back and looking forward at self-review. *Early Education*, 53, 23–26.
- McLachlan, C., Edwards, S., Margrain, V., & McLean, K. (2013a). *Children's learning and development. Contemporary assessment in the early years*. Palgrave Macmillan.
- McLachlan, C., Flear, M., & Edwards, S. (2013b). *Early childhood curriculum. Planning, assessment and implementation* (2nd ed.). Cambridge University Press.
- McLachlan, C., Flear, M., & Edwards, S. (2018). *Early childhood curriculum. Planning, assessment and implementation* (3rd ed.). Cambridge University Press.
- McLachlan-Smith, C. (1996). *Emergent literacy in New Zealand kindergartens: An examination of policy and practice* (Doctor of Philosophy), Massey University.
- McLaughlin, T., Aspden, K., & Snyder, P. (2016). Intentional teaching as a pathway to equity in early childhood education: Participation, quality, and equity. *New Zealand Journal of Educational Studies*, 51, 175–195.
- McNaughton, S. & Gluckman, P. (2019). *Briefing paper to Secretary of Education: Children in the preschool years: areas of development and implications for measurement*. Office of the Prime Minister's Chief Science Advisor.
- Meade, A. (2002). Remembering: Knowing the moment cannot be repeated. *Children's Issues: Journal of the Children's Issues Centre*, 6(2), 12–17.

- Miller, M. G. (2014). Productive and inclusive? How documentation concealed racialising practices in a diversity project. *Early Years: An International Research Journal*, 34(2), 146–160.
- Ministry of Education, Singapore. (2003). *Nurturing early learners: A framework for a kindergarten curriculum in Singapore*. Preschool Education Unit.
- Ministry of Health. (2021). Well Child Tamariki Ora Review Report. <https://www.health.govt.nz/publication/well-childtamariki-ora-review-report>
- Mitchell, L. (2008). *Assessment practices and aspects of curriculum in early childhood education. Results of the 2007 NZCER national survey for ECE services*. New Zealand Council for Education Research.
- Nagle, R. J. (2007). Issues in preschool assessment. In B. A. Bracken & R. J. Nagle (Eds.), *Psychoeducational assessment of preschool children* (pp. 29–48). Lawrence Erlbaum Associates.
- National Association for the Education of Young Children. (2003). *Early childhood curriculum, assessment and program evaluation. Building an effective, accountable system in programs for children birth through age 8. Position statement with expanded resources*. Author.
- New Zealand Ministry of Education. (1996). *Te whāriki. He whāriki mātauranga mō ngā mokopuna o Aotearoa. Early childhood curriculum*. Learning Media.
- New Zealand Ministry of Education. (1998). *Quality in Action: Te Mahia Whai Hua: Implementing the revised statement of desirable objectives and practices in New Zealand Early Childhood Services*. Learning Media
- New Zealand Ministry of Education. (1999). *The quality journey—He Haerenga Whai Hua*. Learning Media
- New Zealand Ministry of Education. (2002). *Pathways to the future: Nga Huarahi Aratiki. A 10-year strategic plan for early childhood education*. Learning Media.
- New Zealand Ministry of Education. (2004/2007/2009). *Kei tua o te pae. Assessment for learning: Early childhood exemplars*. Author.
- New Zealand Ministry of Education. (2006). *Ngā Arohaehae Whai Hua/Self review guidelines for early childhood education*. Author.
- New Zealand Ministry of Education. (2008). *Education (early childhood services) regulations 2008*. Author.
- New Zealand Ministry of Education. (2009). *Te whatu pōkeka. Kaupapa Māori assessment for learning. Early childhood exemplars*. Learning Media
- New Zealand Ministry of Education. (2017). *Te Whāriki. He whāriki mātauranga mō ngā mokopuna o Aotearoa. Early childhood curriculum*. <https://tewhariki.tki.org.nz/en/key-documents/te-whariki-2017/>
- New Zealand Ministry of Education. (2019a). *Early learning action plan, He taonga te tamaiti*. Author.
- New Zealand Ministry of Education. (2019b). *He māpuna te tamaiti—Supporting social and emotional competence in early learning*. Author.
- New Zealand Ministry of Education. (2021a) *Kōwhiri Whakapae: Kōwhiri Whakapae: draft practice and progress tools to support competent and confident kaiako and mokopuna*. Author.
- New Zealand Ministry of Education. (2021b) *Kōwhiri Whakapae Q&A*. <https://core-ed.org/assets/Uploads/Kowhiti-Whakapae-QA-30.9.21.pdf>
- New Zealand Ministry of Education. (n.d.). TKI—Te Kete Ipurangi. Retrieved from [www.tki.org.nz](http://www.tki.org.nz)
- Perkins, M. (2013). Omissions and presuppositions in kei tua o te pae: A critical discourse analysis. *New Zealand Research in Early Childhood Education*, 16, 71–82.
- Peters, S. (2010). *Literature review: Transition from early childhood to school. Report to the Ministry of Education*. Ministry of Education.
- Podmore, V., & Carr, M. (1999). Learning and teaching stories: New approaches to assessment and evaluation. In *AARE-NZARE Conference on Research in Education, Melbourne*.
- Podmore, V. N., May, H., & Mara, D. (1998). *Evaluating early childhood programmes using the strands and goals of Te Whariki, the National Early Childhood Curriculum. Final Report on Phases One and Two to the Ministry of Education*. NZCER Distribution Services.

- Podmore, V. (2006). *Observation: Origins and approaches to early childhood research and practice*. NZCER Press.
- Podkett, M. B., & Black, J. K. (2008). *Meaningful assessments of the young child: Celebrating development and learning* (3rd ed.). Pearson Education, Inc.
- Rameka, L. (2012). Culturally located assessment in early childhood education. *Waikato Journal of Education*, 17(2), 7–21.
- Siraj-Blatchford, I. (2004). Educational disadvantage in the early years: How do we overcome it? Some lessons from research. *European Early Childhood Education Research Journal*, 12, 5–19.
- Snow, C. E., & Van Hemel, S. B. (Eds.). (2008). *Early childhood assessment: Why, what and how*. Report of the Committee on Developmental Outcomes and Assessment for Young Children for the National Research Council. The National Academies Press.
- Snyder, P., McLaughlin, T., & McLean, M. (2014). Recommended practices in assessment. In M. E. McLean, M. L. Hemmeter, & P. Snyder (Eds.), *Essential elements for assessing infants and preschoolers with special needs* (pp. 401–419). Pearson, (eText).
- Swedish National Agency for Education. (2010). *Curriculum for the Preschool Lpfö 18*. <https://www.skolverket.se/download/18.6bfaca41169863e6a65d897/1553968298535/pdf4049.pdf>
- Wilks, A. (1993). *Assessment of children in early childhood centres. Report to the Ministry of Education*. (Master of Education), Massey University.
- Zhang, Q. (2015). Advocating for a comprehensive approach to assessment in New Zealand early childhood education. *NZ Research in Early Childhood Education*, 18, 67–79.
- Zhang, Q. (2017). Do learning stories tell the whole story of children's learning? A phenomenographic enquiry. *Early Years*, 37, 255–267.

**Claire McLachlan** is Executive Dean of the Institute of Education, Arts and Community at Federation University Australia. This role involves leadership of the Institute across six regional campuses in Victoria. Prior to this appointment, she was Dean of the School of Education at Federation, Head of School for Te Hononga, the School of Curriculum and Pedagogy in the Faculty of Education, University of Waikato, and Professor of Childhood Education at Massey University, where she taught courses on languages, literacies, cognition, pedagogy, assessment and evaluation. She has also supervised over 60 HDR students, including ten doctoral completions to date. She has published 9 books, has over 200 research outputs, and has received over \$6 million in research and consultancy funding. Her primary field of research is early childhood education, and her platform of research is focused on literacy, physical activity, curriculum, pedagogy, assessment and evaluation. In addition to personal research, she has undertaken wide ranging evaluation research for three government Ministries in New Zealand; and internationally, she has provided consultancy for the Semarang State University (UNNES) in Central Java, Indonesia and the New Zealand Ministry of Foreign Affairs for education in Tokelau. She is currently Deputy President of the Victorian Council of Deans of Education, the Victorian representative on the Australian Council of Deans of Education, a member of the UNESCO-IBE Early Reading Panel, the New Zealand Ministry of Education Early Childhood Research Policy Forum and the Australian Centre for Policy Development's intergovernmental Council for Early Childhood Development.

**Tara McLaughlin** is a Senior Lecturer in Early Years Education and the founder and director of the Early Years Research Laboratory in the Institute of Education at Massey University. Prior to this appointment, she was a Research Scientist at the University of Florida in the Anita Zucker Center for Excellence in Early Childhood Studies. As a teacher, teacher educator and researcher in Early Years, she is committed to supporting learning environments that promote diverse and equitable opportunities for all children and families. She maintains an active research programme in range of topics related to early learning supports and services for young children, including children with disabilities, their families, and the teachers and specialists who serve them. Her research focuses on inclusive high-quality early intervention and early childhood education. Key focus areas include exploring (a) evidence-based, intentional and social-emotional teaching practices;

(b) assessment and data-informed teaching; and (c) innovative professional learning and development. Her research uses an eclectic mix of research methods including statistical techniques and a focus on measurement quality in educational research. She is currently the lead investigator in the data, knowledge, action projects, funded by the Teacher Led Innovation Fund (TLIF) and Teaching, Learning, Research Initiative (TLRI).



# Chapter 3

## The Collection and Use of Assessment Information in Early Childhood Settings



Monica Cameron

**Abstract** The assessment of children’s learning and development in early childhood education (ECE) is a complex, yet integral, element of effective teacher practise. A commitment to using assessment information about children’s strengths, interests and needs in formative ways to meaningfully plan for children’s ongoing learning adds even further complexity. A formative focus on assessment is affirmed within both *Te Whāriki* (Ministry of Education, 1996, 2017) and the learning story framework (Carr, 2001), yet the ways in which New Zealand teachers enact such assessment in practise has not been extensively researched. Cameron (2018) therefore undertook a comprehensive study of New Zealand early childhood teachers which sought to explore their purposes, practises and knowledge of assessment in relation to four-year-old children. This chapter presents an overview of this study, paying particular attention to the ways that teachers gather assessment information and then in turn use this assessment to plan for children’s learning. A key message of the chapter is the need for teachers to gather assessment information via a range of methods and to use this information in a timely way in order to help ensure they are engaging in effective assessment and planning practises.

### 3.1 Introduction

Assessment is a core element of the teaching and learning nexus (Cameron, 2018), providing information about what children know and can do, and is used for formative, summative or ipsative purposes. Numerous definitions of assessment abound and tend to focus on the need to collect information and for this information to be analysed. For example, Brown (2004, p. 304) has defined assessment as “any act of interpreting information about student performance, collected through any multitude of means or practises”. Similarly, McAfee et al. (2004) describe assessment as being a process of discovering what children know and can do, whilst also noting that with this information teachers can plan the curriculum. This description provides a

---

M. Cameron (✉)  
Te Rito Maioha/Early Childhood New Zealand, Wellington, New Zealand  
e-mail: [Monica.Cameron@ecnz.ac.nz](mailto:Monica.Cameron@ecnz.ac.nz)

useful overview of formative assessment which involves the assessment information gathered and analysed being used to inform teachers' responses to children.

Summative assessment involves assessment information being used to specify what a child knows or can do at a particular point in time, as a snapshot or summary of learning. Ipsative assessment occurs when children's learning is compared against their own earlier knowledge and abilities (Dubiel, 2016). The use of assessment information for formative, summative and ipsative assessment purposes are all valid; however, in the New Zealand ECE context there has been a focus on using assessment information formatively though teacher resources such as *Kei Tua o te Pae* (Ministry of Education, 2004, 2007, 2009a, 2009b) and the promotion of learning stories.

Assessing children's learning is a fundamental and complex element of quality teaching practise, whilst being a central component of effective teaching practise (Education Review Office [ERO], 2007). Although formative assessment practises have been promoted within New Zealand's ECE context by the Ministry of Education (MoE), how teachers are assessing children's learning and how this information is being used to foster future learning has not been extensively researched. This chapter reports on a small-scale study undertaken to explore New Zealand early childhood teachers' assessment practises, purposes and knowledge in relation to four-year-old children (Cameron, 2018).

## 3.2 The Context of This Study

When looking at the guidance given to teachers about assessment by the MoE, the government agency overseeing education provision in New Zealand, it is useful to start with *Te Whāriki*, the national early childhood curriculum (MoE, 1996, 2017). *Te Whāriki* is a bicultural curriculum developed for both Māori and English speaking early childhood settings. *Te Whāriki* is an aspirational curriculum which requires teachers to develop and bring to life a programme which is responsive to and reflective of the local community, whilst being underpinned by the guiding principles of *Relationships, Holistic Development, Family and Community and Empowerment*. Interwoven with these principles are the strands of *Well-being, Belonging, Contribution, Communication and Exploration*, which are further broken down into goals and learning outcomes for children. Alongside developmental and ecological theories of development, sociocultural theories of learning influenced the document and its implementation by teachers. In 2017, following consultation with the sector, a refreshed version of the curriculum was published. Exploration of the refreshed 2017 version, with a particular focus on its assessment-related content, will take place later in the chapter.

As a result of the content and philosophical underpinnings of *Te Whāriki*, the assessment method of 'learning stories' was developed by Carr and colleagues in an attempt to have a better 'fit' with the sociocultural underpinnings of the curriculum (Carr, 1998, 2001). Learning stories are based on a framework that requires teachers to 'Notice, Recognise and Respond' to children's learning and development, and

were specifically developed to be used formatively. Within the ‘Notice’ stage of the learning story, teachers document what they have ‘noticed’ about children’s learning, with this information gathered from observations, conversations with children, their families and other teachers, as well as through photo, audio and video footage. Teachers then apply their professional knowledge to ‘Recognise’ the learning that children are engaging in within what has been noticed. It is in this phase of the learning story that teachers would be expected to make reference to *Te Whāriki*, noting the strands, goals and learning outcomes evident within children’s learning. The final, and formative, step in the process is for teachers to ‘Respond’ to support children’s ongoing learning. Within this phase of the framework teachers document what they have done, or are planning to do, to foster and support children’s ongoing learning.

Learning stories were quickly adopted by teachers, and by 2003 78% of teachers reported using learning stories (Mitchell & Brooking, 2007). Learning stories have remained popular, and subsequent studies have indicated their continued widespread use (Cameron, 2018; Loggenberg, 2011; Mitchell, 2008) and dominance, an issue of concern to Zhang (2015). This widespread use is unsurprising, given the emphasis on learning stories within MoE assessment-focused resources for teachers. In 2004 the MoE introduced *Kei Tua o te Pae*, early childhood assessment exemplars to the sector, with subsequent books added in 2007 and 2009. This resource focused solely on supporting teachers to understand and utilise learning stories as an assessment method, and whilst the use of observations to gather information was noted within the resource, the types of observation techniques to be utilised and when were not noted. A four-year MoE funded nationwide professional development programme designed to support teachers’ understandings of *Kei Tua o te Pae*, ran from 2004–2009 (Mitchell, 2011). In 2009, a parallel set of assessment exemplars for kaupapa Māori<sup>1</sup> settings, *Te Whatu Pōkeka*, were also published by the MoE and made available for Māori immersion settings. However, since 2009 the MoE has provided no further publications, professional development or resources focused explicitly on assessment. Within this dearth of guidance and support, teachers have continued to implement learning stories with, as is explored in the next section, varying degrees of success.

There is a paucity of research focused on ECE teachers’ assessment practises in New Zealand, though some small-scale studies have been carried out that offer insights into teacher practises. For example, Davis (2006) found that much of teachers’ assessment of children was not documented, whilst Turnock (2009) noted that teachers’ assessment purposes influenced the focus of the assessment. Meanwhile, Niles (2016) found that teachers did not believe they had enough time to document assessment, whilst Lim (2012) noted that assessment documentation paid little attention to children’s mathematical learning. Much of what is known about the undertaking of assessment in the sector comes from Education Review Office

---

<sup>1</sup> Kaupapa Māori settings are those which are underpinned by Māori principles, practises, approaches and beliefs and where the Māori language is the exclusive or predominant method of communication.

(ERO<sup>2</sup>) national evaluation reports. Whilst only one of these evaluations specifically focused on ECE teachers' assessment practises (ERO, 2007), several subsequent publications have reported findings relating to assessment practises in the sector (ERO, 2013; 2015; 2016; 2017). In 2007, ERO noted that the quality of teachers' assessment practises varied both within and between services, and that in almost half of the settings reviewed, improvements were needed to ensure that children's learning and development was evident in assessment documentation and used to inform future learning.

Whilst subsequent ERO publications have acknowledged and described effective assessment practises, aspects requiring further attention and growth have also been repeatedly noted. For example, ERO (2013) recounted that whilst the strands and goals of *Te Whāriki* were often reflected in assessment documentation, the learning outcomes—which outline content relating to development and subject content knowledge—were rarely evident. Later reports have noted the poor quality of assessment practises in some settings, where documentation tended to demonstrate children's participation in the programme rather than their learning (ERO, 2015) and have highlighted that “assessment continues to be an area for improvement in many early learning services” (ERO, 2016, p. 36).

Further evidence regarding the quality of teachers' assessment practises has come from Stuart et al. (2008), who undertook an impact evaluation of the effectiveness of the professional development associated with *Kei Tua o te Pae*. Their findings suggested that teachers' assessment practises in relation to collaboration with children, families and teachers had strengthened. However, engagement in the PD had not resulted in strengthened analysis of the assessment information gathered, or better processes for ensuring that children's learning was visible within assessment documentation. Stuart et al. also noted that teachers' espoused assessment practises were often not evident in practise, and that “whilst documented assessments were being used formatively, these practises rarely became part of the written narrative” (2008, p. 9). Despite the important role assessment plays in the teaching and learning nexus, research specifically focused on the topic was somewhat limited, which created an impetus for the study described in this chapter.

### 3.3 My Own Study

In 2015/2016 I undertook a mixed methods study to explore New Zealand early childhood teachers' assessment purposes, practises and knowledge in relation to assessing four-year-old children's learning (Cameron, 2018). Phase one of the study involved a nationwide survey, utilising both fixed response and open-ended questions. Invitations to participate in an online survey were sent to all settings catering for four-year-old children who had an email listed on the MoE's database of ECE services.

---

<sup>2</sup> The Education Review Office (ERO) is a government agency which oversees the external evaluation of education provision in New Zealand.

Practitioners holding required qualifications for their settings, from teacher-led as well as parent-led and whānau-led<sup>3</sup> services were invited to participate in the study. A total of 380 responses were included in the final data analysis, with responses from across the range of ECE service types within the New Zealand ECE sector. Data analysis involved thematic coding of the open-ended questions, with fixed response questions analysed using SPSS to generate descriptive statistics.

Phase two of the study involved 14 semi-structured key informant interviews with experienced and accomplished teachers based on a stratified sample of the diverse composition of the New Zealand ECE sector. A range of methods were used to identify potential interviewees, including recommendations from their employing organisations, from staff within initial teacher education programmes and professional development facilitation, and from people with connections to culturally diverse settings. Interviewees also completed the phase one survey and were asked to share three pieces of anonymised assessment documentation as exemplars of their actual assessment practises, though in total 88 pieces of assessment documentation were shared. Data analysis involved thematic analysis of the transcribed interviews to identify patterns, alongside frequency counts of words and phrases to allow for descriptive statistics. Content analysis was carried out on the assessment documentation examples shared, together with counting frequently utilised words and phrases, whilst their survey responses were analysed in the same ways that the phase one data had been. Data focused on how teachers collect assessment information and how this information is used to plan for children's learning is now shared and examined.

### 3.4 How Teachers Gather Assessment Information

Findings from both phases of the study indicated that teachers utilise a range of methods to collect assessment information, including both formal and informal methods. For the purpose of this study, formal methods were deemed to be those which were planned for and organised ahead of time, whilst informal methods were those that documented assessment information in the moment as teachers noticed something of interest.

As shown in Table 3.1, phase one participants indicated using all the informal methods listed to gather assessment information at least annually. Of note, all informal methods, other than audio and video recordings, were reportedly used by 95% or more of the respondents. At 60% and 80%, respectively, audio and video recording use were nevertheless high in comparison with the reported use of formal methods. The most highly used formal method was event recording at 70%, followed by time samples, running records, and incident/frequency samples (60–65%), with all other formal methods used by less than 40% of respondents.

---

<sup>3</sup> Whānau is the Māori word for a family group, and the term 'whānau-led' denotes ECE settings which are run by whānau.

**Table 3.1** Percentage of phase one survey respondents reporting frequencies of use of assessment methods

Formal assessment methods	Reported use in last year	Use in the last four weeks	Informal assessment methods	Reported use in last year	Use in the last four weeks
Event recording	70	18	Photographs	100	99
Running record	65	25	Conversations with children	95	82
Time sample	60	10	Consultation with parents	99	91
Own test	27	1	Discussion amongst colleagues	100	97
Own checklist	40	19	Examples of children's work	100	91
Published test	9	1	Anecdotal/informal observations	97	87
Published checklist	19	3	Discussion with outside professionals	96	42
Scatterplot/socio-gram	24	5	Audio recording	60	28
Incident/frequency sample	63	11	Video recording	80	49

When the timeframe for use was narrowed down to use in the last four weeks, it was evident that formal assessment methods were being used much less frequently. The reported use in the last four weeks for informal methods remained fairly similar to overall reported use, with the exception of discussion with outside professionals, audio and video recording. However, substantial drops in reported use of formal methods were evident with, for example, event recordings dropping from 70 to 18%, and time samples from 60 to 10%.

The types of assessment documentation shared by the interviewees included learning stories, anecdotal observations with photos, photographs, work samples, checklists and worksheets. None of these examples included evidence of formal observations being used to gather the information included within them. Such findings are perhaps not surprising given the emphasis on informal methods of assessment data collection inherent within *Kei Tua o te Pae* and within the learning story framework. Despite *Kei Tua o te Pae* being developed to support teachers' understanding and implementation of learning stories as an assessment tool, Perkins (2013) has noted that the resource makes very few references to observations. Whilst the term 'Noticing' is used within the resource to describe assessment data collection, what this involves is not explicitly explored. Such omissions have likely contributed to a narrowing in the range of tools used to collect assessment information.

What was evident when analysing responses to the open-ended survey questions and the interviews was that many participants considered the act of taking a photograph to be the assessment, rather than another method for collecting assessment information, just as a time sample or event recording is. This confusion about aspects of assessment was also evident with a number of participants within both phases of the study using the terms ‘assessment’ and ‘learning stories’ interchangeably and as if they mean the same thing despite learning stories being but one assessment method available to teachers.

### 3.5 Family and Child Contributions to Assessment

The survey also explored how parents and whānau were supported to contribute to children’s assessments, as this is another way in which teachers gather assessment information and a key element of the learning story framework. As shown below in Table 3.2, whilst informal conversations, parents and whānau having easy access to portfolios, and teachers documenting information shared in learning stories were all noted as being used in the four weeks prior to survey completion by 84% or more of participants, parents and whānau contribution to the assessment process in their own words reportedly happened with less frequency.

However, analysis of the assessment examples shared by the interviewees, revealed limited evidence of family engagement in the assessment process. Just one of the 88 examples was written by a family member, whilst two had included

**Table 3.2** Percentage of respondents and interviewees indicating ways parents and whānau are involved in the assessment process in the last four weeks

	Percentage of respondents	Percentage of interviewees
Parents and whānau add their perspective to learning stories written by teachers	63	58
Parents and whānau provide ‘home’ learning stories for their child’s portfolios	44	46
Parents and whānau have easy access to their child’s portfolio	96	100
Parents and whānau regularly talk informally with teachers about their child and their progress	96	93
Information shared by parents and whānau is written into learning stories by teachers	84	84
Parent and whānau-teacher meetings to discuss children’s progress	13	8

parents' voice in the narrative by teachers, and another family had shared photographs without narrative from a holiday. A further five (6%) involved parent feedback once the finished assessment documentation had been shared with them.

Similar response rates to these questions were found from those of survey respondents. Whilst the survey was not representative of the sector, given the relatively high reported rate of families being involved in the assessment process within the survey and interviews, it was somewhat surprising that more evidence of families providing information and their perspectives was not evident in the examples shared. These findings align with those of Pennell's (2018, p. 48) study, whereby "Parent inclusion in the writing of the learning story and engagement with their child's profile book was minimal". Pennell went on to suggest that a key contributor to this was the differing power dynamics within the assessment process, where teachers are usually considered the experts in the process.

One interviewee, had included three pages of photographs a family had shared within their assessment examples. The purpose of these photos was to share what the child had been doing outside of the centre, and to provide a conversation point with the child. The lack of a narrative or analysis of learning associated with these photos, however, means they cannot be considered assessment documentation. Rather, the inclusion of this piece of what the interviewee considered to be assessment documentation provides additional evidence of teachers' uncertainty in relation to what constitutes assessment. Thus, teachers' knowledge of assessment, particularly what counts as assessment and what does not, appears to be an area requiring further development (Cameron, 2018).

Another key feature of learning stories (Carr, 1998, 2001) is the capacity to include children's voices and perspectives within the assessment process. When exploring how children were contributing to their assessments, responses indicated that whilst children played a role in the process, this was at a lower rate than their parents, except for revisiting their portfolios. Whilst 91% of respondents and 62% of interviewees indicated that children had revisited their portfolios in the four weeks prior to data collection, the next most common ways that children contributed were by using their portfolio as a resource to get feedback on their progress (65%), followed by judging their own achievements (62%). Analysis of the assessment examples shared by the interviewees indicated that just 9% included evidence of children contributing to the assessment process.

The findings relating to family and child involvement in the assessment process suggest that there is a potential disconnect between teachers' espoused beliefs and actual practises. Whilst the survey results from both phases suggested that family and children were regularly involved in assessment, the assessment examples shared portray a different picture. Such findings are in alignment with those of Stuart et al. (2008), who noted that whilst interviewees made frequent reference to children's role in the assessment and assessment documentation process, this was seldom evident in the assessment documentation itself. Similarly, whilst the interviewees in my study voiced a commitment to engaging families in the assessment process, the inclusion of parent information was again not evident in the assessment documentation provided by these participants.



### 3.6 Using Assessment Information to Plan for Children's Learning

Despite the emphasis on assessment information being used formatively inherent within both learning stories and *Te Whāriki*, planning for children's ongoing learning was not considered to be the main purpose of assessment by the study participants, as shown in Table 3.3.

These findings made it clear that teachers believe that giving feedback to children and sharing assessment information with families are the main purposes of assessment, ahead of using assessment to inform planning and curriculum. The influence of these beliefs is evident in the data now discussed.

As detailed in Table 3.4, the most commonly reported use of assessment information on a weekly basis was to writing learning stories (75%), followed closely by giving feedback to parents and whānau (74%), and giving feedback to children (67%). Despite learning stories being developed as a formative assessment tool (Carr, 1998, 2001) just 34% of respondents indicated that they were using assessment information weekly to plan for children's ongoing learning. Similarly, of the 88 assessment examples shared, only 31% included evidence of the 'Respond' element of the learning story by noting what teachers had done or were going to do to support ongoing learning. It appears that whilst teachers are making good use of learning stories to share information with children and their families, the formative assessment aspect of the learning story tool appears underutilised.

What also emerges from the data is that 'writing learning stories' was not necessarily considered to be part of the planning process. This was evident through the disparity between the reported writing of learning stories and the development of individual planning. If learning stories were being used to document planning for individual children, the reported use rates would be very similar. This was not the case, providing evidence of the disconnect between learning stories and planning for many respondents.

When combining the 'once a week' and '2–4 weeks' timeframes, relatively high responses were found for using assessment to develop an individual plan (64%), develop a programme for individual children (76%) and develop a programme for a group of children (83%). By comparison over the same period, 98% had used assessment information to write learning stories, 83% to give feedback to parents and 91% to give feedback to children. Whilst learning stories were developed to be accessible for children and parents, and to encourage their participation in the

**Table 3.3** Respondents' ranking of the main purposes of assessment

1	Giving feedback on learning to the child
2	Sharing children's learning with parents and whānau
3	Informing planning and curriculum
4	Monitoring children's progress
5	Accountability to outside agencies

**Table 3.4** Percentage of respondents indicating how regularly they used assessment information for the following purposes

	Once a week	2–4 Weeks	3 Months	6 Months	Once a year	Never
Monitor progress	46	37	13	2	1	1
Develop individual plan	26	38	24	7	1	4
Develop programme for individual children	33	43	17	4	1	2
Develop programme for group of children	34	49	13	2	1	1
To write learning stories	75	23	1	0	0	1
To give feedback to parents/whānau	74	19	5	2	0	0
To give feedback to children	67	24	4	2	1	2
Information for school	8	18	22	12	19	21
To evaluate the programme	25	41	24	6	1	3
To evaluate teaching practises	29	36	20	8	3	4
Other	10	24	14	9	5	38

assessment process (Carr, 2001; MoE, 2004, 2007, 2009a, 2009b), it appears that this has become the dominant focus in practise. Assessing children's learning and planning for their ongoing learning was given lesser priority, despite these being fundamental elements of the assessment process.

Definitions of assessment, offered by researchers such as Brown (2004) and McAfee et al. (2004), indicate that assessment involves the gathering of information, which is then analysed in the light of professional knowledge to make informed decisions about children's learning and progress. Whilst many definitions go on to refer to the assessment being used formatively, generally definitions of assessment do not include reference to sharing with children and families. Whilst doing so may be an important purpose of assessment, and certainly a key feature of the learning story framework, the primary purpose of assessment is to evaluate children's learning. It appears that the emphasis on sharing assessment information with children and families present within the learning story framework, along with its endemic use in New Zealand, has very strongly influenced teachers' understandings, to the point where the actual purpose of assessment has been somewhat subsumed.

Given the popularity of learning stories within the ECE sector, respondents were also asked to indicate how many learning stories they had written in the previous four

weeks of teaching, with 68% of respondents indicating they had written 15 or less, and 10% writing 26 or more. Whilst this gives us information about the numbers of learning stories being written, it does not explore the quality of these learning stories and if or how they were being used to inform planning. Some evidence of how learning stories were being used for planning does, however, come from the assessment documentation shared by the interviewees. Of the 88 documents shared, 48 (54%) were deemed to be learning stories in that they contained the elements of 'Notice' and 'Recognise'. Of the 48 learning stories, 27 (56%) included evidence of a 'Respond', though a variety of terms were apparent for this element, such as 'Where to next', 'Opportunities and Possibilities', 'Extend' and 'Resources'. Whilst not representative of the ECE sector, these were experienced and accomplished teachers and so it is likely that their assessment practises are indicative of more widespread practises across the sector. Analysis of their shared assessment examples provided clear evidence of learning stories being utilised, with all but one of the interviewees sharing at least one learning story amongst their examples. However, the inclusion of work samples, worksheets and photographs without narratives or with a description rather than evidence of the 'Notice, Recognise and Respond' framework being utilised, also indicates the somewhat limited use of learning stories as a formative assessment method. These findings align with those of Stuart et al. (2008), who noted that many of the examples included in their evaluation were records of participation in the programme, rather than evidence of formative assessment.

Some study participants indicated a belief that it was not the teachers' role to plan for children's learning. Statements such as "They are the facilitators of their own learning—they have an intrinsic drive to do so" (interviewee) and "They do not need to be assessed if they are allowed to work at their own pace" (survey respondent) indicated that a small number of teachers did not see a need for assessment, or for assessment information to be used to inform what happens next to support children's learning. Beliefs such as these were seen to influence the assessment documentation shared by the interviewees, as those who expressed a belief that children should be leading their own learning were less likely to share assessment examples which included the elements of 'Notice', 'Recognise' and 'Respond'. For example, one of the kindergarten interviewees shared six pieces of assessment with only one including all of the elements of 'Notice', 'Recognise' and 'Respond', whilst the teacher from a Rudolf Steiner setting shared four pieces of assessment documentation, none of which included a 'Respond' section. Similar views were also expressed by a small number of survey respondent, providing evidence that some teachers were uncertain about their role in supporting children's learning within a sociocultural environment. Similarly, White (2009) highlighted teachers were experiencing tension as they sought to support and promote children's learning within assessment approaches underpinned by sociocultural theory, whereby teachers were uncertain about their role in supporting children's learning. In contrast, those interviewees who articulated a strong belief that the teachers' role included supporting children's ongoing learning, included evidence of a 'Respond' section in their exemplars. Few of the assessment exemplars shared referred to earlier planning for children as part of what was being documented, further indicating the limited use of formative assessment.

### 3.7 Timeframes to Complete Assessment Documentation

Within the survey, respondents were asked to indicate the usual timeframe for completing assessment documentation of children's learning. Findings suggested significant variability, with just 7% indicating assessment documentation was completed on the day data was collected, whilst 59% indicated taking a week or longer. Whilst numerous reasons for these timeframes were shared, including time to assess and limited non-contact time, some respondents also noted the need to consult with others and to gather additional information. The timeframe associated with completing assessment documentation has significant potential to impact upon whether it can be used formatively. Whilst participants may have been using assessment information gathered to inform their responses prior to the documentation being completed, this was not clear. If assessment information is not being used formatively until after the documentation is completed, then it is possible that children's learning, or their interests, have moved on and therefore the planning is no longer relevant. It has long been acknowledged that learning stories take significant time to complete (Blaiklock, 2008). Given the heavy reliance on documenting assessment information using learning stories present across both phases of the study, it is possible that despite the formative nature of the learning story framework, it is in fact inhibiting teachers' engagement in formative assessment practises.

Blaiklock's (2008) concerns about the amount of time learning stories take to produce appear to be held by some teachers. For example, just 21% of respondents agreed or strongly agreed that they had enough time in their working week to assess and document children's learning, and 43% indicated that time to complete assessment documentation was the biggest barrier to assessing children's learning. Whilst teachers are required to assess children's learning, how they do this and how the assessment information gathered is documented is not stipulated. In spite of the "unreserved endorsement and support" (Zhang, 2015, p. 1) given to the use of learning stories by the MoE and promoted through *Kei Tua o te Pae* and *Te Whatu Pōkeka* and the associated professional development contracts, teachers do not have to use learning stories.

### 3.8 Implications for Practice

The findings relating to how teachers gather assessment information and how this is used to inform planning have a number of implications for the ECE sector. Whilst teachers are aware of a range of methods available to them for collecting assessment information, their practise strongly favours using informal methods to gather information about children's learning. Despite effective assessment requiring both spontaneous (informal) and planned (formal) observations (Featherstone, 2011), it is evident that teachers are more frequently utilising informal observations to gather information about children. This heavy dependence on informal observations has

been identified as a concern (Blaiklock, 2008), as this approach does not allow for the teacher to be intentional about what they observe and when. As a result, it is unlikely that all aspects of children's learning and development are being assessed. This is problematic because *Te Whāriki* is a holistic curriculum, requiring teachers to pay attention to all aspects of children's learning articulated across its learning outcomes, including the physical, cognitive, social, emotional, spiritual and language domains. Whilst it appears that teachers are comfortable attending to the sociocultural underpinnings of *Te Whāriki*, these more developmental aspects of the curriculum do not seem to be a focus for teachers. If teachers are not intentionally assessing children's learning in relation to all aspects of their learning and development, then they are not upholding the intention of *Te Whāriki* nor meeting their obligations in its implementation. ERO (2007) had previously noted that little more than half of the settings evaluated were engaging in assessment practises that attended to the breadth of *Te Whāriki's* holistic focus. The findings of my study suggest that little has changed in this space.

Whilst formal observations were not well utilised as a method for collecting assessment information by most of the participants in this study, they do have a place in the assessment process. Because such observations are planned ahead of time, teachers are able to make decisions about which method will support them to gather the assessment information that is needed, thereby helping to ensure that all aspects of children's learning are being assessed. Formal observations also allow for different types of information to be gathered, such as the frequency, duration and timing of particular behaviours, skills or activities. Rather than either formal or informal approaches being 'better' than the other, assessment needs to be fit for purpose (McLachlan et al., 2013). This requires that teachers be knowledgeable about a range of formal and informal observation methods, so that informed decisions can be made about which will garner the information that they need.

Findings from this study provide evidence of the widespread use of photographs as a method for collecting assessment information. However, concerns were also evident in teachers' use of and understandings of photographs as an assessment method. A reliance on photographs to 'tell the story' means that the narratives associated with many of the photographs shared by interviewees were descriptive rather than being an assessment. Stonehouse and Gujer (2016) referred to this type of documentation as being a 'doing story' rather than a learning story because of the lack of analysis. Whilst photographs and descriptive narratives have a place as a means of sharing information with children and families, it is important that teachers do not think that this is sufficient to constitute a learning story. A learning story should consistently include the elements of 'Notice, Recognise and Respond' if they are indeed to be used as a form of assessment.

For some respondents, the taking of the photograph was considered to be the assessment, when it is in fact a piece of assessment information that then needs to be analysed. This finding aligns with those noted by Perkins (2010), who described teachers taking photographs without a specific pedagogical purpose so that they could later write up a learning story. However, without pedagogical purpose, the use of photographs in this way does not align with contemporary definitions of

assessment whereby assessment occurs as the information gathered is analysed in light of teachers' professional knowledge. If photographs are to be relied upon as a method for collecting assessment information, then it is critical that teachers are knowledgeable about the strengths and limitations of this tool and are aware that the taking and documenting of a photograph does not on its own constitute an assessment.

Whilst the learning story framework utilised by most teachers actively seeks to include children and families in the assessment process, and teachers valued such inclusion of their knowledge and perspectives, in practise this was somewhat limited. This is a significant limitation given that assessment as underpinned by sociocultural theory should include multiple perspectives. Much has been written about the challenges of including children's and families' perspectives in practise (Cooper, 2012; Pennell, 2018; Whyte, 2016). Without the genuine inclusion of perspectives from children and their families, teachers are not able to develop a complete picture of the child as a learner. Whilst sharing information with children and families has come to be seen as the main purpose of assessment, the inclusion of their perspectives does not seem to have garnered the same emphasis. The implications of this are significant in that teachers do not have access to all of the information they need to make informed decisions about children's learning and to plan for future learning. The almost sole reliance on teachers' perspectives also perpetuates power imbalances in which teacher perceptions of children are seen as being more important.

Two key purposes of the learning story framework were to share assessment information with children and families, and to encourage the inclusion of multiple perspectives in the assessment process (Carr, 1998, 2001). However, these purposes, and particularly the first, appear to have become teachers' main focus. Monitoring children's progress and using assessment information formatively to inform planning, which are fundamental purposes of assessment, appear not to be core considerations for teachers despite these being two of the main purposes of assessment (Bagnato, 2007). Despite the emphasis on formative assessment within the learning story framework and *Kei Tua o te Pae* (Ministry of Education, 2004, 2007, 2009a), this study found limited evidence of teachers using assessment information to plan for children's learning.

The Ministry of Education (2011) has long championed the use of formative assessment practises, including in the ECE sector. Despite this endorsement and the formative nature of learning stories, the findings of this study make it clear that teachers are not consistently engaging in formative assessment practises. There may be a number of reasons for this, including beliefs around the role of the teacher and teachers' knowledge about assessment, especially formative assessment. Since 2009, there have been no Ministry-funded resources, or nationwide professional development, to support teachers in further developing their understandings of assessment, which is likely to have impacted on teachers' ability to continue developing their assessment knowledge and practises. Changes in terminology and emphasis relating to learning stories may also have weakened teachers' knowledge. For example, whilst Carr (2001) defined the learning story framework as involving 'Describing, Documenting, Discussing and Deciding', *Kei Tua o te Pae* utilised the phrasing of 'Notice, Recognise and Respond', with 'Recording and Revisiting' later being added by Lee

et al. (2013). Similarly, whilst Carr (2001) noted the need for teachers to ‘Decide’ what was to happen next to support children’s learning, by 2010 this had been tempered to “a suggestion of the possible pathways” (Carr et al., 2010, p. 212). Further softening of the language used to an acknowledgement that planning “is not written for every story” (Lee et al., 2013, p. 109) adds further opportunities for misunderstanding by teachers. It is timely for teachers to be supported to better understand what formative assessment entails, so that they can make informed decisions about how to use the assessment information they are gathering.

Teachers in this study appeared committed to assessing children’s learning and documenting this in ways that were accessible for children and families. One of the considerable challenges identified by teachers, however, was the amount of time that this takes. Assessment documentation was frequently not completed until well after the information had been collected, which in turn impacts on when and how it is used formatively. If teachers are not using the assessment information gathered to inform their responses to children’s learning until after the documentation has been completed and shared with others, then it is possible that children’s learning and interests will have shifted.

The refresh of *Te Whāriki* in 2017 included greater clarity regarding the role of assessment, with teachers being required to “use assessment to find out about what children know and can do, what interests them, how they are progressing, what new opportunities are suggested and where additional support may be required” (MoE, 2017, p. 63). The formative role of assessment is emphasised, whilst also noting that assessment should be carried out in both informal and formal ways, with a range of methods associated with both approaches specified. The revised *Te Whāriki* also explicitly notes the role of analysis in the assessment process. This step of the assessment process appears currently misunderstood by many teachers, who instead believe that the collecting of information is the assessment. The strengthening of the assessment-related content of *Te Whāriki* makes it clearer for teachers what is required of them, with inherent implications for teachers’ assessment knowledge and practises. However, it is also important that teachers are supported to engage in professional learning and development in relation to the changes made to *Te Whāriki* and associated implications if teaching practises, including assessment practises, are to be further developed and enhanced from those apparent in the findings of my study.

### 3.9 Conclusion

Findings from my study suggest that teachers’ assessment practises in the New Zealand ECE sector would benefit from being strengthened, particularly in relation to using a range of methods to collect assessment information and for using the information gathered and analysed to inform their planning. When engaging with international literature on assessment and comparing it to the findings of my study, it is evident that New Zealand ECE teachers’ assessment practises and knowledge are



constrained and inhibited by a focus on learning stories rather than on assessment in its broader sense.

Teachers need support to better understand the range of assessment methods available to them, so that they are well positioned to make decisions about which method is most appropriate for gathering the particular type of information that they need in relation to a child's learning. Formal observations should play a fundamental role in the process of gathering assessment information because through formal observations teachers are able to gather data about what is actually happening, not just what they think is happening. One-off anecdotal observations and photographs document a particular moment in time, but they do not give enough information about the duration of what is happening, the frequency with which it is happening, or the depth of information that is required.

Teachers also need support to develop their knowledge around the purposes of assessment, particularly formative assessment. More in-depth knowledge of assessment will leave teachers better positioned to engage in robust assessment practises. Given the central role of assessment to quality learning and teaching (Brown et al., 2014; Ministry of Education, 2011), it is crucial that all teachers are engaging in high quality assessment practises. The potential positive impacts on children's learning and development when teachers engage in high quality assessment practises are immeasurable and something which the sector must continue to strengthen.

## References

- Bagnato, S. J. (2007). *Authentic assessment for early childhood intervention*. The Guilford Press.
- Blaiklock, K. E. (2008). A critique of the use of learning stories to assess the learning dispositions of young children. *New Zealand Research in Early Childhood Education*, 11, 77–87.
- Brown, G. T. L. (2004). Teachers' conceptions of assessment: Implications for policy and professional development. *Assessment in Education: Principles, Policy and Practice*, 11, 301–318.
- Brown, G. T. L., Irving, S. E., & Keegan, P. J. (2014). *An introduction to educational assessment, measurement and evaluation*. Dunmore Publishing.
- Cameron, M. J. (2018). *Assessing four-year-old children's learning: New Zealand early childhood teachers' purposes, practices and knowledge*. Massey University.
- Carr, M., Smith, A. B., Duncan, J., Jones, C., Lee, W., & Marshall, K. (2010). *Learning in the making. Disposition and design in early education*. Sense Publishers.
- Carr, M. (1998). *Assessing children's experiences in early childhood. Final report to the Ministry of Education. Part one*. New Zealand Ministry of Education.
- Carr, M. (2001). *Assessment in early childhood settings: Learning stories*. Paul Chapman Publishing.
- Cooper, M. R. (2012). *"It's a little tricky": Collaborating with families to assess the learning dispositions of infants and toddlers*. The University of Auckland.
- Davis, K. (2006). *'It's much more muddled-up than that': A study of assessment in an early childhood centre*. Master of Education Unpublished Thesis, Canterbury.
- Dubiel, J. (2016). *Effective assessment in the early years foundation stage* (2nd ed.). Sage.
- Education Review Office. (2007). *The quality of assessment in early childhood education*. Crown Publishers.



- Education Review Office. (2013). *Priorities for children's learning in early childhood services*. Author.
- Education Review Office. (2015). *Continuity of learning: Transitions from early childhood services to schools*. Author.
- Education Review Office. (2016). *Early learning curriculum. What's important and what works*. Author.
- Education Review Office. (2017). *Newly graduated teachers: Preparation and confidence to teach*. Author.
- Turnock, K. (2009). "It's a shift in thinking, a shift in practice": Moving to a new assessment framework in early childhood education. Master of Teaching and Learning Thesis, University of Canterbury.
- Featherstone, S. (2011). *Catching them at it! Assessment in the early years*. A&C Black Publishers.
- Lee, W., Carr, M., Soutar, B., & Mitchell, L. (2013). *Understanding the Te Whāriki approach. Early years education in practice*. Routledge.
- Lim, R. (2012). *Making mathematics learning visible: Supporting, documenting, and assessing children's mathematical learning in kindergarten*. Paper presented at the New Zealand Association for Research in Education annual conference, Hamilton, New Zealand.
- Loggenberg, E. M. (2011). *Assessment in early childhood education in New Zealand*. Master's in Educational Psychology Unpublished Thesis, Massey University.
- McAfee, O., Leong, D. J., & Bedrova, E. (2004). *Basics of assessment. A primer for early childhood educators*. National Association for the Education of Young Children.
- McLachlan, C., Edwards, S., Margrain, V., & McLean, K. (2013). *Children's learning and development. Contemporary assessment in the early years*. Palgrave Macmillan.
- Ministry of Education. (1996). *Te Whāriki. He whāriki mātauranga mō ngā mokopuna o Aotearoa. Early childhood curriculum*. Learning Media.
- Ministry of Education. (2004). *Kei tua o te pae. Assessment for learning: Early childhood exemplars*. Learning Media.
- Ministry of Education. (2007). *Kei tua o te pae. Assessment for learning: Early childhood exemplars*. Learning Media.
- Ministry of Education. (2009a). *Kei tua o te pae. Assessment for learning: Early childhood exemplars*. Learning Media.
- Ministry of Education. (2009b). *Te Whatu Pōkeka. Kaupapa Māori Assessment for Learning. Early childhood exemplars*. Learning Media.
- Ministry of Education. (2011). *Ministry of Education position paper: Assessment (schooling sector). Ko te whārangi takotoranga ārunga, ā te tāhuhu I te mātauranga, te matekitenga*. Learning Media
- Ministry of Education. (2017). *Te Whāriki. He whāriki mātauranga mō ngā mokopuna o Aotearoa. Early childhood curriculum*. <https://tewhariki.tki.org.nz/en/early-childhood-curriculum/>
- Mitchell, L., & Brooking, K. (2007). *First NZCER national survey of early childhood education services. 2003–2004*. New Zealand Council for Educational Research.
- Mitchell, L. (2008). *Assessment practices and aspects of curriculum in early childhood education. Results of the 2007 NZCER national survey for ECE services*. New Zealand Council for Educational Research.
- Mitchell, L. (2011). Enquiring teachers and democratic politics: Transformations in New Zealand's early childhood education landscape. *Early Years: An International Journal of Research and Development*, 31, 217–228. Available: <https://doi.org/10.1080/09575146.2011.588787>
- Niles, A. J. (2016). *Complexities of assessment: Striving to get it 'right'*. Master of Education Thesis, University of Canterbury.
- Pennell, J. (2018). Journeying towards meaningful connections: A reflection on the inclusion of parents in the assessment of children's learning. *He Kupu*, 5, 43–51.
- Perkins, M. (2010). Paparazzi or pedagogy? A review of the literature about photography in assessment. *Early Education*, 46, 22–25.
- Perkins, M. (2013). Omissions and presuppositions in Kei Tua o te Pae: A critical discourse analysis. *New Zealand Research in Early Childhood Education*, 16, 71–82.

- Stonehouse, A., & Gujer, M. (2016). *Inspiring documentation—What? Why? How? Gowrie documentation project*. Paper presented at the Early Childhood Australia annual conference, 6–8 Oct 2016 Darwin, Australia.
- Stuart, D., Aitken, H., Gould, K., & Meade, A. (2008). *Evaluation of the implementation of Kei Tua o te Pae. Assessment for learning: Early childhood exemplars: Impact evaluation of the Kei Tua o te Pae 2006 professional development. Report prepared for the New Zealand Ministry of Education*. Cognition Consulting Limited.
- White, E. J. (2009). *Assessment in New Zealand early childhood education: A Bakhtinian analysis of toddler metaphoricity*. Monash University.
- Whyte, M. (2016). *Working parents' perspectives and involvement in their young child's learning using the Initiating Parent Voice*. Master of Education Thesis, University of Auckland.
- Zhang, Q. (2015). Advocating for a comprehensive approach to assessment in New Zealand early childhood education. *NZ Research in Early Childhood Education*, 18, 67–79.

**Monica Cameron** is Senior Lecturer for Te Rito Maioha, which is a large national education training provider in New Zealand. She completed her Doctor of Education degree at Massey University in 2018 on the topic of assessment of four-year old children, involving a study which accessed the perspectives of a range of early childhood service providers. She is an experienced kindergarten teacher and has formerly worked for Massey University as a provider of professional learning for early childhood teachers and as Senior Tutor in Massey's Institute of Education. She has strong interests in assessment, professional practice and professional learning.

**Part III**  
**Different Approaches to Documentation**

# Chapter 4

## Collective Imaginary Situation as a Site of Diagnostic Assessment: A Cultural-Historical Analysis of Children's Emerging Science Motive Orientations in a Conceptual PlayWorld



Prabhat Rai, Marilyn Flear, and Glykeria Fragkiadaki

**Abstract** The chapter proposes a cultural-historical model of assessing children's learning and development that demands assessment practices to move from symptomatic assessments of learning to diagnostic assessment of children's maturing and emerging higher mental functions (e.g. logical thinking, focused attention, mediated memory and use of drawing marks or written words). Based on data from the digital educational experiment titled Conceptual PlayWorld@homeLIVE the chapter offers insights into how the concepts of social situation of development, zone of proximal development, and dialectical relationship between the everyday and scientific concept could be used to understand children's motive orientations and to evaluate their maturing (The terms maturing functions draws from the systems of concepts in cultural-historical theory, here it is used to signify the tripartite constellation of present age, maturing functions and next age. Seen in this way it refers to the genesis and development of new psychological structures at a particular age period.) and matured psychological functions thus offering a holistic understanding of the psychological structure at a given cultural age period. Within the project, homeLIVE sessions were based on the characteristics of Conceptual PlayWorld (Flear, Early Years 41:353–364, 2018). Examples from a child's home setting are used to show how Conceptual PlayWorld can be used as an auxiliary tool to create condensed learning moments thus creating opportunities for both assessment and also to support children

---

The terms maturing functions draws from the systems of concepts in cultural-historical theory, here it is used to signify the tripartite constellation of present age, maturing functions and next age. Seen in this way it refers to the genesis and development of new psychological structures at a particular age period.

---

P. Rai (✉) · M. Flear · G. Fragkiadaki  
Faculty of Education, Monash University, Melbourne, VIC, Australia  
e-mail: [Prabhat.Rai@monash.edu](mailto:Prabhat.Rai@monash.edu)

M. Flear  
e-mail: [Marilyn.Flear@monash.au](mailto:Marilyn.Flear@monash.au)

G. Fragkiadaki  
e-mail: [Glykeria.Fragkiadaki@monash.au](mailto:Glykeria.Fragkiadaki@monash.au)

in giving their best performance. Through the Conceptual PlayWorld approach, the child is encouraged to explore their emerging psychological functions thus offering opportunity for new practices to emerge.

## 4.1 Introduction

Nearly two decades ago, Fleer and Richardson (2004) remarked that approaches to early years curriculum and pedagogy have acknowledged and, in many cases, also adopted (even if reluctantly or partially) theoretical insights emerging from a socio-cultural (read cultural-historical) approach, but the same is not true for assessment practices. In contrast, assessment tradition in early years are located in a Piagetian paradigm or theories that support age and stage based developmentalism. A sequential model of development helps in developing a normative standard around it. Internationally, large-scale assessments are becoming increasingly common. In the background of the introduction of International Early Learning and Child Welfare Study (IELS) initiated by the Organisation of Economic Cooperation and Development (OECD), Mathias Urban and Peter Moss have pointed out:

New Zealander academics fear the IELS will lead to ‘teaching to the OECD measures’ and a consequent ‘pedagogy of compliance’, as governments are tempted ‘to call on the apparent precision of numbers to prescribe and measure context-free and curriculum-free internationally developed and validated outcomes over time’. (Moss & Urban, 2017, p. 254).

Carr et al. (2016) suggest this could be detrimental to the New Zealand’s early childhood sociocultural and bicultural curriculum. They argued for local and situated measures instead of large-scale testing and international comparison. McLachlan et al. (this volume, Chap. 1) have reasoned against this absolutist position to suggest we should be concerned about the ‘poor use of data’ rather than the collection of data itself. The work in cultural-historical theory offers some insight on use of data, particularly on how we can weave assessment and pedagogy to best support children’s development in early years.

Arguing for a socio-cultural-situated perspective on assessment Gee (2007) remarked “many a standardised test can be perfectly ‘scientific’ and useless at the same time; in a worst-case scenario, it can be disastrous” (Gee, 2007, p. 364). Similar to a Vygotskian argument, he asks for lived social practices of the individual to be central to assessment. In reviewing the relationship between learning theory and assessment, Baird et al. (2014, p. 5) argues that “sociocultural theory does not sit well with the current state of the field of assessment practice, in large part because standardised, same-for-all assessments have been equated with fairness in the minds of many”. Assessment practices have historically focused on issues of objectivity, criterion and administration of the test rather than the fundamental question of ‘why assess?’ (Drummond, 2003). Gipps (1994, pp. 3–4) puts it precisely that there are two important questions worth asking for in this context:

1. What is the assessment for?
2. What kind of learning do we wish to achieve?

Gipps (1999) adds to these concerns by also alerting to the power relationship between student and teachers in the assessment. Thus, ‘who assesses’ is an equally important question.

The writings of Vygotsky (1987, 1997, 1998), Feuerstein et al. (1979, 1980) and Lidz (1990, 1997) do offer a sociocultural/cultural-historical perspective on assessment. This chapter presents a synthesis of some of the theoretical discussions in cultural-historical theory and proposes Conceptual PlayWorld (CPW), a model of developing intentional teaching in early years, as an assessment tool that aligns with the essence of Vygotskian theorization. The focus in the CPW is not on the individual performance of children on tasks, rather children, educators and their families together create a collective imaginary situation that offers opportunities for understanding children’s maturing and also already matured functions. The term maturing and matured function comes from the system of concepts in cultural-historical theory which hints at the “tripartite constellation of present age, maturing functions and next age as the objective zone of proximal development” (Chaiklin, 2003, p. 7). This theorisation thus refers to the psychological functions that are leading or central in a given age period and they need to be formed, for the child to progress to the next cultural age period. It is argued here that the collective imaginary situation created in the Conceptual PlayWorld creates possibility for new formations especially *conscious awareness* to emerge. The chapter is divided into following four sections: first, presenting a brief theoretical argument for cultural-historical approach in assessment; second, presenting the methodological aspects of using educational experiment for assessment and explains main characteristics of the Conceptual PlayWorld; third, showcasing data from a focus child’s participation in the Conceptual Playworld@homeLIVE and fourth, analysing and offering synthesis using Hedegaard’s (2008a) dialectical-interactive approach.

Two key terms are used in this chapter that are fundamental for the new thinking on assessment in early childhood being proposed. One is the concept of maturing/matured psychological functions and the other is cultural age periods. Both cultural-historical terms are part of the system of concepts proposed by Vygotsky. Rather than ages and stages of development defining childhood development, cultural age periods suggest a child’s engagement in their world and how they genetically contribute to it, and it is this engagement that determines their development (rather than their age). Periods denotes what is likely to be a child’s leading activity at particular point in their lives, such as to first communications with those around them, wanting to play and imagine with friends, etc. (see Vygotsky, 1998). Psychological functions, such as memory, imagination, are always in the process of developing, and a child’s leading activity, such as to play, supports the development of the psychological function of imagination. This is a very different reading of development to that of a biological perspective where age is the defining character of a child’s development. The fundamental argument presented here is that how one conceptualises development determines how they frame their assessment, and what markers of development

they seek to capture and study. This chapter follows a cultural-historical conception of development and explicates some of its implication on the assessment practices in early years.

## 4.2 Assessing Children in Early Years—A Cultural-Historical Approach

In her book ‘Assessing Children’s Learning’, Mary Jane Drummond directs early years educators to ask important questions about the purpose of assessment.

Questions of what, when, where and how to assess are of secondary importance beside the more searching question of ‘Why assess?’ And ‘Why assess?’ implies ‘Why educate?’ Effective assessment can only be based on a thorough understanding-of our purposes in teaching and of our aspirations for our pupils (Drummond, 2003, p. 12).

Graue (1993, p. 291) highlighted a disjuncture between assessment and pedagogic planning, as she argued “assessment and instruction are often conceived as curiously separate in both time and purpose”. In Vygotskian tradition, as Gipps (1994, p. 9) has highlighted, “tester and pupil would collaborate to produce the best performance of which the pupil is capable, given help from an adult, rather than withholding such help to produce typical performance”. This distinction of a ‘typical’ performance and ‘best’ performance alerts us to the question of ‘children’s potentiality’ in assessment. Instead of merely asking what and how questions it also guides assessment practices to ask “where to” question.

In his writings, Vygotsky differentiated between symptomatic assessment and diagnostic assessment. His critique of the assessment paradigm is a powerful one and holds true even now where the focus of assessment stays with measuring certain symptoms that shows child’s learning. He called this effort as *measuring the obvious empirically* and this is not going to help children’s development. Drawing an analogy with diagnosis of headache he explicated,

The patient complains of a headache; the doctor makes a diagnosis: the illness is a headache. This kind of diagnosis is essentially empty since the investigator adds nothing new to what he knew from observations of the patient himself and plays back to the patient his own complaints, supplying them with scientific labels (Vygotsky, 1998, p. 205).

Merely finding scientific labels for the obvious challenge the child is facing in her/his learning cannot help to develop an explanatory power that could help to pedagogically intervene in the situation. He rightly pointed out,

In the best case, we will be able only to increase precision of the symptoms and confirm them with measurement. But, we can never explain the phenomena we observe in the development of the child nor predict the further course of development, nor indicate what kind of measures of a practical nature must be applied with respect to the child (Vygotsky, 1998, p. 205).

The central concern in diagnostic testing “should be an assessment of what a child can do under the proper educational circumstances, rather than a tabulation of what he or

she has learned to that point” (Vygotsky 1993, pp. 14–15). Vygotsky critiqued the unidimensional nature of assessment and models of assessment inspired by IQ testing. He asserted that symptomatic assessment does not help making right intervention for the child.

If a child is brought in for consultation with complaints that he is developing poorly mentally, has a poor imagination and is forgetful, if after investigation, the psychologist makes the diagnosis: the child has a low intelligence quotient and mental retardation, the psychologist also explains nothing, predicts nothing, and cannot help in any practical way, like the doctor who makes the diagnosis: the illness is a cough (Vygotsky, 1998, p. 205).

The focus on child’s already developed functions and developing a deficit modelling around what child is not able to do Vygotsky argues does not help us to think pedagogically about the next steps which could support children’s learning. Offering direction for developing a holistic understanding of children’s development Vygotsky proposed,

A pedagogue arrives at a diagnosis differently. He [sic] attempts to establish the particularities of a child’s development at a specific moment. He is not interested in individual symptoms or complexes of symptoms (syndromes); he is interested in their mutual limitations and relationships within a child’s developmental mechanism as well as in the conditions determining this last. In Blonskii’s phrase, *he must offer the whole picture of symptom-complexes, as well as an etiological analysis.* (Vygotsky 1993, p. 250, emphasis added).

Feuerstein’s work on dynamic assessment has analogous theoretical commitments with Vygotsky’s work on diagnostic assessment. Feuerstein et al. (1979, 1980) offered a model that differed from the traditional testing approach in at least three ways:

1. Centrality of the role of the assessor. Assessor is not there in the setting to merely administer the test protocol but had an important pedagogic role to support the learner in successful problem solving.
2. Assessment focus on process and intervention rather than product or what learner knows already. Instead of focusing on what does learner knows already the dynamic assessment model focused on what how to support learner’s emerging engagement with the problem-solving task.
3. Focus on the instructional setting of the learner.

Moreover, dynamic assessment procedures similar to assessment for learning approaches offer potentially useful suggestions for teaching thus challenging the divide of learning and assessment situation. As Lunt (1993, p. 152) explains dynamic assessment “... involve a dynamic interactional exploration of a learner’s learning and thinking process and aim to investigate a learner’s strategies for learning and ways in which these may be extended or enhanced”.

Another important aspect would be to think about how an assessment situation is conceptualised. If we see an assessment situation merely as a moment to perform for evaluation, we segregate it from the learning moments. Meaning making makes learning valuable and easier (Shepard, 1992). Moreover, the standardized model of assessing children deny role of cultural and historical factors in children’s learning.



As Bruner and Haste (1987, p. 1) explains “(from) social life, the child acquires a framework for interpreting experience and learns how to negotiate meaning in a manner congruent with the requirements of the culture. ‘Making sense’ is a social process; it is an activity that is always situated in a cultural and historical context”.

The theoretical arguments put forward by Vygotsky, Feuerstein and work in cultural-historical theory offers a fundamentally different approach to thinking about assessing children’s learning and development. One fundamental difference would be to think of assessment as part of teaching–learning process that offers new possibilities of learning in a condensed form than a posthoc measurement tool seen in testing regime.

Assessment not as a tool for looking back but rather looking forward. As mentioned earlier, assessment thus become a pedagogic tool that explains ‘what does the child know already’ and ‘how is the child learning’ but more importantly it engages with the ‘where to’ question by understanding the maturing psychological functions. To understand this argument further Vygotsky offers a system of concepts. Central to developing this cultural-historical understanding would be the following three concepts:

- Zone of proximal development
- Social situation of development
- Dialectical relationship between an everyday concept and a scientific concept.

A further discussion on these concepts is presented in the subsequent section which makes explicit how these ideas contribute to developing a system that does not analyse individual learner’s performance on a standardised task but rather an approach that takes child’s social situation and her/his own development, while thinking about children’s learning and development.

### 4.3 Zone of Proximal Development

In his introduction to the book ‘Vygotsky and Education’, Luis Moll remarked

The power of Vygotsky’s ideas is that they represent a theory of possibilities. The construct of zone of proximal development reminds us that there is nothing “natural” about education settings (and about educational practices such as ability groupings, tracking, and other forms of stratification). These settings are social creations; they are socially constituted, and they can be socially changed (Moll, 1990, p. 15).

ZPD is extensively used as a concept to understand the interrelationship between the learner and more expert other during the teaching–learning process. The cultural-historical approach to learning and development emphasises the importance of what the learner brings to any learning situation as an active meaning-maker and problem solver who act in and on the world. Therefore, it acknowledges the dynamic nature of interplay between teachers, learners and tasks and provides a view of learning as arising from interactions with others. It is important to acknowledge that all mediation does not lead to learning.

It is also important to highlight here that a careful reading of the Vygotskian conceptualisation of ZPD suggests that “it is not a property of the child” (Chaiklin, 2003, p. 43). ZPD indicates the “maturing functions not of a particular child but reflects the psychological functions that need to be formed during a given age period in order for the next age period to be formed” (Chaiklin, 2003, p. 49). Evaluating or getting an estimate of the development of the functions which are not capable of independent performance could be important for designing pedagogic intervention. If the child is not capable of independent performance the role of the adult and their pedagogic action need to be thought carefully. However, the role of the expert other in relation to the ZPD needs further elaboration in Vygotsky’s own work. He obliquely hints at the possible directions in *Educational Psychology* (1997) but the nature of the guidance or instruction was left to others to elaborate. In his discussion of Vygotsky and pedagogy, Daniels (2001, p. 55), for example, states “instruction was the driving force of development for Vygotsky”. However, it is still fair to argue that Vygotsky did not elaborate in detail on the role of instruction in the ZPD. Consequently, this has given rise to several interpretations of the role of instruction as well as the ZPD itself (Wells, 1999).

The concept of the ZPD figures prominently as a means for describing the way a child’s intellectual capacity changes over time to reach new levels with the dialogic support of an adult or more capable peer (Wertsch, 1984). Vygotsky first employed the idea of ZPD as a means of assessing a child’s capacity to learn, rather than a way of thinking about pedagogy. Mercer (2000) points out that the concept usually deals with assessing individuals, rather than understanding the quality of teaching–learning as an ‘intermental’ and ‘interthinking’ process. Quoting Erickson (1996), Daniels (2001) made a similar remark “that much of the application of the ZPD concept is within dyadic settings with a single expert and a single novice...such a situation may not be typical of patterns of communication in learning situations” (Daniels, 2001, p. 68).

Chaiklin (2003) has pointed out that there is risk of the concept of ZPD being used in a loose and amorphous way if the focus on development is not acknowledged, pointing out that: “Vygotsky’s concept of zone of proximal development is more precise and elaborated than its common reception or interpretation” (Chaiklin, 2003, p. 39). Chaiklin’s main argument is that the ZPD is all too frequently seen as a learning zone, rather than a zone which also involves the development of higher mental functions (e.g. memory, attention and imagination). These mental functions Vygotsky argued develops in children while interacting with others in their social situation, thus developing complex cognitive abilities, e.g., focused attention, logical thinking, voluntarily controlled memory, etc. His is a powerful argument which reminds us to follow three criteria while using ZPD:

First, the model [of child development] must be explanatory, rather than descriptive. More specifically, the model should be organised by substantial principles that can explain development “as a single process of self-development” (Vygotsky, 1998, p. 189). Second, the model should consider the whole child, as an integral person. Third, childhood should be divided into periods, such that each period is characterised in a principled and unified way (Chaiklin, 2003, p. 46).

The term model here is used to signify the importance of a holistic approach that explains the development of psychological structure, the interrelationships between different psychological functions. Chaiklin (2003) takes us back to Vygotsky's conceptualisation of periodization in childhood which are characterised by changes in psychological structures, which can be seen as a set of relations amongst psychological functions such as perception, memory, speech and thinking. The central point worth highlighting here as Vygotsky remarked is

Figuratively speaking, in determining the actual level of development, we *determine only the fruits of development, that is, that which has already matured and completed its cycle*. But we know that the basic law of development is that different aspects of the personality and its different properties mature at different times. While some processes of development have already borne fruit and concluded their cycles, other processes are only at the stage of maturation. A genuine diagnosis of development must be able to catch not only concluded cycles of development, *not only the fruits, but also those processes that are in the period of maturation* (Vygotsky, 1998, p. 200, emphasis added).

#### 4.4 Social Situation of Development

In his analysis of the development of the mind of a child, Vygotsky introduced the concept of 'social situation of development, which denotes:

The special combination of internal developmental processes and external conditions that are typical of each developmental stage and that condition both the dynamic of mental development for the duration of the corresponding developmental period and the new qualitatively distinct psychological formations that emerge toward its end (Bozhovich, 2009, p. 66).

Children's learning from this perspective takes place within institutional practices. Learning changes the person's relation qualitatively with the practices the person participates in (Hedegaard 2012). Rogoff (1990, 2003) and Hedegaard have elaborated upon Vygotsky's seminal work and have provided further explanations of child development in the context of the child's relationship with their social situation. Vygotsky's approach to children's development points at different development periods in relation to changes in the child's social situation. The concept of the social situation of development according to Hedegaard (2012) is critical to understand the dynamic nature of children's development and to incorporate child's perspective in a given age period.

The social situation of development represents the initial moments for all dynamic changes that occur in development during a given [age] period. ...The social situation of development specific to each age [period] determines strictly regularly the whole picture of the child's life or his social existence (Vygotsky, 1998, p. 198, as cited in Hedegaard 2012, p. 12).

Vygotsky in his writings has not emphasised "biological age in itself but [refers] to age period defined by societal traditions that then becomes reflected in the child's experiential relation to the world" (Hedegaard, 2012, pp. 11–12). This is an important insight for understanding how children negotiate different institutional demands as they engage in their schooling. In particular it allows us to distinguish

between learning and development, by linking development, as the more significant change, with societal demands, such as starting school. Learning, though important, is evidenced by changing relationships with a social situation; while development arises from changes in the social situation, which themselves arise through the structuring of society. These distinctions are helpful when considering the differences in demands faced by children from diverse backgrounds and wide-ranging experiences in different contexts. Vygotsky's conceptualisation around age period is guided by two interrelated concepts- social situation of development and age-specific neoformations. These neoformations Vygotsky theorised "characterize the reconstruction of the conscious personality of the child in the first place are not a prerequisite but a result or product of development of the age level... This is why maturation of neoformations never pertains to the beginning, but always to the end of the given age level" (Vygotsky, 1998, p. 198).

In addition to social context, culture has been given a significant importance in the cross-cultural and sociocultural research on children's education that builds on Vygotskian ideas. In drawing upon a large corpus of cross-cultural research, Rogoff (1990, 1998, 2003) also highlights the importance of examining culture to understand development, arguing that "development can be understood only in light of the cultural practices and circumstances of their communities—which also change. In essence, culture determines not only the principles for defining development but also frames the contexts in which the development of children is supported (Rogoff, 2003, pp. 3–4). Vygotsky (1994) explained that "the influence of environment on child development will, along with other types of influences, also have to be assessed by taking the degree of understanding, awareness and insight of what is going on in the environment into account" (Vygotsky, 1994, p. 343).

Rogoff et al. (1998) argued that we need to begin to understand "the development of children in the context of their own communities" and this requires the "study of the local goals and means of approaching life" (p. 228). She explains that the socio-historical approach assumes that individual development must be understood in and cannot be separated from the social context. The fundamental message which Vygotsky's work is alerting us to us that learning is not a way of coming to know about the social world but, rather, a way of inhabiting or being in it.

#### **4.5 Dialectical Relationship Between Every Day and Scientific Concepts**

"A concept is, as it were, a condensation of assessments, a key to a whole complex consisting of them, their infrastructure" (Vygotsky, 1994, p. 279). Vygotsky distinguished between development of scientific and everyday concepts in terms of their characteristics and how they were acquired. "Compared with spontaneous concepts, he argues, scientific concepts have four features which the former lack: generality, systemic organization, conscious awareness and voluntary control" (Wells 1994,

p. 1). Wells (1994) further explained that out of these four features, the first two are the criteria to label a concept ‘scientific’. The distinction is not the fields in which they are applied but “the way in which—whatever the field—they relate to experienced ‘reality’” (p. 1). Everyday concepts are related directly to the world of experience; while scientific concepts are abstractions and contain meanings which may be generalised, but are constrained by what the learner is able to bring to their acquisition. Wells explained:

While the first two features serve to define the way in which scientific concepts differ from everyday concepts, the second two features, by contrast, are better seen as more general characteristics of a stage of mental development that is associated with, and perhaps dependent on, their acquisition. For this reason, although the two sets of features are different in scope, they are also interdependent (Wells 1994, pp. 1–2).

Scientific and everyday concepts therefore differ in the manner in which they are acquired. Unlike everyday concepts, which Vygotsky (1987) suggests are appropriated spontaneously by the child through the social interaction that occurs while engaging in activities in his or her immediate community, scientific concepts are largely acquired as a result of deliberate and systematic instruction in an educational setting.

Although both everyday and scientific concepts develop in communication, one mainly out of school and one mainly in school, schooled discourse represents a qualitatively different form of communication because words act not only as means of communication, as they would in everyday discourse, but as the object of study. In classroom interactions, the teacher directs the children’s attention to word meanings and definitions and the systematic relationships amongst them that constitute an organised system of knowledge. Formal instruction, with its special organization and discourse, through its social and semiotic mediations, helps develop a general, self-contained system of words and their relationships (Gallimore & Tharp, 1990). Through formal instruction, children develop the capacity to manipulate consciously this symbolic system.

Vygotsky also emphasised that everyday and scientific concepts are interconnected and interdependent; their development is mutually influential. One cannot exist without the other. It is through the use of everyday concepts that children make sense of the definitions and explanations of scientific concepts. That is, everyday concepts mediate the acquisition of scientific concepts. However, Vygotsky (1987) proposed that everyday concepts are also dependent on and transformed by the scientific concepts; they become the “gate” through which conscious awareness and control enter the domain of the everyday concepts (p. 193). Thus, he wrote, scientific concepts grow down into the everyday, into the domain of personal experience, acquiring meaning and significance, and in so doing “blaze the trail for the development of everyday concepts upward towards the scientific” and facilitate “mastery of the higher characteristics of the everyday concepts” (p. 219). Vygotsky also described,

the development of the scientific ... concept, a phenomenon that occurs as part of the educational process, constitutes a unique form of systematic cooperation between the teacher and

the child. The maturation of the child's higher mental functions occurs in this cooperative process, that is, it occurs through the adult's assistance and participation (Vygotsky, 1987, pp. 168–169).

The Vygotskian literature explains this movement in terms of the idea of mediation. Vygotsky (1978) claims that the secret of effective learning lies in the nature of the social interaction between two or more people with different levels of skills and knowledge. This involves helping the learner to move into and through the next layer of knowledge or understanding. According to a Vygotskian approach, this transition from social to personal happens not through interaction but during (in) interaction (Ellis, 2000).

The concepts of ZPD, SSD and everyday scientific concepts could guide us in thinking about assessment in a fundamentally different way where it encapsulates robust understanding of child's social situation, their motives of participation in the activity setting and also how concept learning happens in children at different cultural age periods. This study uses educational experiment as a methodological tool to show how a meaningful setting could be created in the child's environment that could offer new possibilities of learning and assessment.

#### **4.6 Conceptual PlayWorld: Educational Experiment as a Methodology for Assessment**

As a methodological approach for intervention in the family homes Conceptual PlayWorld follows principles of double move as delineated by Hedegaard (2002, 2005). Conceptual PlayWorld for families is a planned intervention that is jointly developed by parents/caregivers and researchers.

Following Davydov's (1962, 1964, 1998) work Hedegaard (2008a, b) has argued that "the educational experiment is a multi-faceted planned preparation of teaching which has, as its goal, the creation of optimal conditions for the learning and development of the participating children" (p. 185). Children's play and storytelling which are part of their everyday life are used as a collective space for joint problem solving or exploration.

We have argued elsewhere (see Fleer et al., 2020) that Conceptual PlayWorld as a model of intervention creates a condensed and amplified experience for children. We are extending this argument to highlight that child's learning in the Conceptual PlayWorld is seen:

1. in-motion
2. beyond fossilised complete forms
3. the past in the present, and
4. where the researcher has a central role in developing practice in collaboration with teachers/families (Fleer et al., 2020, p. 57).

The five characteristics of a Conceptual PlayWorld were conceptualised in relation to Vygotsky's conception of development, and are summarised as follows:

1. *Selecting a story for the collective imaginary play*: the story has to be dramatic that offers possibility for developing new tensions and has an engaging plot, relevant to the children's cultural age period and their interest. It has to be enjoyable for both the children and their parents (e.g. the drama of Rosie, the hen being chased by the fox on a farm).
2. *Designing the imaginary spaces*: the story teller has the leading role to design the imaginary space. They have to carefully think both of the digital sessions of 30 minutes and what families could do in their home settings afterwards. So, while designing the space, the team of researchers and story tellers had to think of the physical spaces in the home and also the digital spaces which they share (e.g. making a replica of the farm and a hutch, wearing a crest or hair band to be in the character of Rosie, the hen or bringing a soft toy or a puppet to represent fox and her mother).
3. *Entering and exiting the imaginary situation*: being in role, children, their families and story teller all enter together in the imaginary situation. They decide signs like singing a rhyme together or walking like a hen or moving a magic wand as a sign of entry or exit from the PlayWorld. This entering and exiting the PlayWorld together hints to the children that they are now in character in the Conceptual PlayWorld.
4. *Planning a problem to be solved*: the story teller carefully extends and introduces new character and drama in the story. This offers opportunity to introduce an already planned problem situation to the children. The drama of the story engages children and they are offered new concepts by the story teller and parents to solve the problem. As children are trying to solve the problem, they become more aware of the concepts.
5. *Planning the roles in the imaginary play*: the story teller and researchers planned the roles together so that adults in the home settings and other children could play together. Conceptual PlayWorld offers possibility of adding new characters to the emerging drama of the story (e.g., the parents could take the role of a fox, Rosie's mother or Rosie's younger sibling, they could also be a wise Grandma hen who can offer advice to solve the problem).

The Conceptual PlayWorld model creates new developmental conditions in condensed forms that could amplify children's imagining and conceptual development. In the context of Conceptual PlayWorld, children's imagination is the central object of inquiry but it also takes into consideration a number of bordering and auxiliary concepts (e.g., child's agency, logical thinking and tool-mediated action to explain children's concept formation). Thus, the effort is to move beyond the stimulus response relationship to a wholeness approach that analyses children's social situation of development to understand their learning and development.

## **4.7 Conceptual PlayWorld@homeLIVE: A Digital Educational Experiment**

The study reported here was done in Melbourne during the months of Oct–Dec 2020 during the coronavirus pandemic. A new model of digital practices was developed following the five characteristics of the Conceptual PlayWorld. A seven-phase model of practice was followed to develop a responsive space using zoom meeting platform. The effort was to create new developmental conditions in the home setting for children’s STEM concept formation in early years. Mentioned below are the phases of the implementation of the ConceptualPlay@homeLIVE educational experiment which was developed based on children’s storybook *Rosie’s Walk* by Pat Hutchins.

### ***4.7.1 Phase 1: Understanding Children’s Social Situation of Development***

Collaboration with the participants is one of the central features of the educational experiments. To develop a collaborative relationship with the families and to understand their children’s social situation of development, we did interviews where we asked questions about children’s everyday routines, their interests, family’s expectations from the Conceptual PlayWorld sessions, and finally sharing our expectations and ideas about PlayWorld. This process helped to understand the peculiarities and commonalities in the home practices. Understanding each child and his existing developmental conditions were important part of designing these educational experiments. These details were discussed amongst the team members who worked on the design of the Conceptual PlayWorld based on children’s book *Rosie’s Walk*.

### ***4.7.2 Phase 2: Sharing Ways of Participating and Inhabiting a Conceptual PlayWorld***

Conceptual PlayWorld was a new concept for the families. A short video by our story teller and further details on expectation from the parents when they will participate alongside their children was shared with the families.

### ***4.7.3 Phase 3: Bi-weekly Conceptual PlayWorld Sessions***

The main part of the intervention was bi-weekly Conceptual PlayWorld sessions. These sessions were woven around a children’s storybook. Children and care-givers played, embodied actions from the story and together explored and solved



the problem. These sessions were immediately followed by debrief meetings and planning for the next session. These meetings especially were space amongst the researchers and story teller to discuss their assessments about each child and their family's performance.

#### ***4.7.4 Phase 4: Sharing Resources with the Families for Creating a Conceptual PlayWorld in the Home Setting***

While the sessions by the story teller were well participated by the families, the challenge was to sustain the narrative. Video resources that children and parents could watch together. Activities like origami which children can learn alongside the story narrative of the PlayWorld and fact sheets which children can read with their elder siblings or parents were shared so that families could create more meaningful interactions around the story which children were doing in the Conceptual PlayWorld.

#### ***4.7.5 Phase 5: Creating Opportunities for family's Participation***

At the beginning of each session and also during the sessions a deliberate attempt was made by the story teller so that families could share their own PlayWorlds. As a first step, they were asked to share retelling of the story with their children. Family's enthusiasm and their effort to bring children's toys and everyday artefacts from their home setting to share the story helped to understand family's engagement and how their children were learning in the Conceptual PlayWorld.

#### ***4.7.6 Phase 6: Making Conceptual Development Visible***

One of the prime focus of the PlayWorld is development of STEM concept. After introducing an emotionally engaging problem for the children, the effort was to capture the process on how children were making an attempt to solve the problem.

### **4.7.7 Phase 7: Parent's Forum to Share Their Experience**

A parent's forum was organised at the end of the four weeks programme to understand parent's feedback and to learn about the Conceptual PlayWorld they developed with their children in the home setting.

## **4.8 Conceptual PlayWorld@homeLIVE: Who, What and How**

In total 12 families and their children participated in a bi-weekly 30 min Conceptual PlayWorld session with a story teller. The families were recruited through the Play-group Victoria's network. The 12 families were from Chinese, Vietnamese, Indian, Spanish, Irish and Australian ethnicities. Seven boys and five girls in the age range of 2 year 11 months to 4 year 9 months were part of this research.

Before children joined the PlayWorld a detailed interview with the parent/s were conducted to understand their children's interests, daily routines and expectations from the PlayWorld sessions. All the sessions were recorded using Zoom's online recording tool. All the families participated with their video turned on, which showed the trusting relationship with the storyteller. In addition, families also shared short video clips from their home settings when they were with their children in the Conceptual PlayWorld. The video data were downloaded to a local hard drive and analysis was done using video data and not by transcribing them. Only relevant sections needed for presentation in this paper were transcribed. Using video footage helped in unpacking children's motives and participation better in this educational experiment. Following Hedegaard and Fleer's (2008) dialectical-interactive approach, three layers of analysis: common-sense interpretation, a situated practice interpretation, and a thematic interpretation were done to understand children's motives of participation in the setting and also to make their learning visible for assessing their developing understanding. More efforts were placed to understand the intentional orientation of the participants and an effort was made to look at data to understand it how Conceptual PlayWorld is influencing the developmental condition of the focus child. The following theoretical conceptions outlined in Hedegaard's analysis were focus of the analysis at this level:

- i. "The intentional orientation of the researched person
- ii. The ways of interaction between participants (interaction patterns)
- iii. The conflicts between different person's intentions and projects in the activity
- iv. The competence and motives that can be seen in the researched person's interactions in his or her social situations" (Hedegaard, 2012, p. 58).

While synthesising these understandings at the thematic level effort was made to formulate explicit relations using theoretical concepts. The concept of SSD, ZPD and scientific concept development were specifically used to find patterns and make

theoretical claims based on the interpretation of parents and their children’s motive orientations in the activity setting.

## **4.9 What Did We Learn?**

This section presents data from one of the focus child Lexi to show how a model of assessment informed by cultural-historical theory was used to develop a holistic understanding of child’s learning and development. Lexi and her mother (Cara) participated in total 7 out of 8 PlayWorld sessions.

### ***4.9.1 Understanding Lexi’s Social Situation of Development***

Lexi’s family is from Australian and Chinese ethnic origins. At the time of joining the Conceptual PlayWorld she was 4 year 5 months. She spoke English at home and had a younger one-year-old sister. Both the sister participated in the sessions together with their mother Cara. Before lockdown due to COVID-19 pandemic, she was attending 3-year-old kinder for one day on Monday. The parents were very concerned about their child not getting enough stimulation and learning in the lockdown. As an alternative, Cara has registered for a number of online classes for Lexi. Apart from a number of playgroup sessions, she also does an online music class (Table 4.1).

The mother thought during the lockdown her daughter’s skills of participating in online sessions have improved. Lexi is generally very social but not very engaged in online classes. Cara shared that “she’s gone from not wanting to engage with others on the online classes to putting up her hand”. The mother also felt that children as young as four-year-old are able to “learning to pause, unmute and wait for turn”. Lexi is also learning that “the teacher is not always going to pick you, even though you’ve got your hand up”. Cara thought there is lot of social learning happening through online meetings which is good and necessary for children.

### ***4.9.2 Understanding Lexi’s Maturing Psychological Functions and Interest***

In her conversation, Cara shared Lexi really like to dramatise and role play. She like adding her imagination to play. Cara shared that unlike her cousin Cloe who does not like role play, Lexi takes leadership in developing her play. In her interview, Cara highlighted that “Lexi loves to draw; she writes but her writing is still in pre-writing stage. She loves colouring” (C...). It is a nice quiet activity for her. Lexi is not “keen on engaging with what others are saying, she is keen on sharing her ideas”. Cara

**Table 4.1** Everyday activity record of Lexi

Time of the day	Activities children engage in (both at home and in other institutions and settings)
 <p>Morning routine (Wake up time–1:00 pm)</p>	<p>Get up early around 6, breakfast and some playgroup sessions. Lexi does regular playgroup sessions in the morning hours on Tuesday and Friday. She was also doing a session called ‘inspiring minds’ where the focus was on emotional regulation/development of children on Mondays. Similar to PlayWorld the educator uses to read an online story. They also do half an hour online music session every Wednesday, this was continuity from the in-person music sessions she use to attend before the lockdown. They also watch TV shows and especially Playschool in the morning hours, then Sesame street. The girls then have free play, Lexi enjoys playing with her dolls</p>
 <p>Post lunch routine (1:00 pm–5:00 pm)</p>	<p>Then there is a lot of imaginative play. Children play outside, sometimes they also go to the nearby park. Some days, especially on a warm day Lexi plays with water table and sand. The younger sister is one year old and that has restricted the possibility of Lexi going out during the day, she sleeps twice a day and that leaves less time to go out. Lexi’s father has got paternity leave and he has got Tuesday and Friday off. Lexi loves colouring and drawing and sometimes she enjoys doing it her father. The children also do craft activities with their grandmother every week. Cara’s mother comes every week</p>
 <p>Evening/bedtime routine (5:00 pm–Sleep time)</p>	<p>Both the girls have their own book selves. Cara values book reading and every evening before bed time Lexi chooses her own book. Lexi also enjoys finding different characters or objects in the book. Cara said they have a variety of books including the ones they read when they were children. After bed time story Lexi also listens to an app that is focused on bedtime meditation. She plays it before sleep that calms her down</p>

(continued)

**Table 4.1** (continued)

Time of the day	Activities children engage in (both at home and in other institutions and settings)
Weekend <i>(In case your routine is different from the weekdays)</i>	Weekends have similar routine at the moment due to lockdowns. The grandmother is able to visit at least once a week and that day children play with her

reported that Conceptual PlayWorld sessions were “good for her in many ways as she was meeting other children, her age, she gets to see them doing the same thing.”



The collage above shows images from Lexi’s participation in the Conceptual PlayWorld (from L-R clockwise: (i) Lexi and Cara role playing the story, (ii) Lexi and Cara walking like a hen in the farm, Lexi’s younger sister also joins in, (iii) Lexi role playing as a hen beyond the Conceptual PlayWorld setting and (iv) Lexi showing her get-home-machine.)

**4.9.3 Lexi’s Participation in Collective Imaginary Situation of the Conceptual PlayWorld**

The participation with other children in the collective drama extended beyond the sessions. Cara mentioned that “after the sessions she would ask me if I would like to play with her. If I could be rosy or if I could be the Fox and yeah, I noticed she wanted to extend on the narrative. So, she’s sort of at that stage where creative

and imaginative play is really; it's her thing. .... And, and I think the, introducing her to these concepts and the language as well through, um, I would say through fun, relaxed narrative of play. Is what really worked for Lexi, because I hear how she is using the vocabulary now and making connections." This learning of new vocabulary was one of the central features which were becoming explicit as Lexi was participating in the PlayWorld. The mother also shared that "initially Lexi was intimidated by some of the, um, I guess when the challenge of making your own get-home-machine came, um, yeah. Lever and fulcrum, so she wouldn't attempt it. And I, I hadn't seen that for a very long time. Lexi avoiding or like being afraid to attempt something. And then, and then it wasn't long before, like the next session, um, where everybody else was sharing, what they had made, which was, it was just so wonderful sort of." The collective imaginary situation also motivated the child because "seeing that other children, even younger than herself, had a go with their parents to make their own things. Um, yeah. Um, well she called them see-saw so yeah, I think that was fantastic. And it just, um, showed her that it was possible. And yeah, I think all that, um, fear went away when she could see the examples of what other kids had made with their parents ... it was nice that we managed to have a bit of a collective approach".

#### ***4.9.4 Weaving Pedagogy and Assessment: Synthesis from a Cultural-Historical Perspective***

The narrative from the parent above and data from Lexi's participation in the Conceptual PlayWorld showed that there were two dimensions to this assessment process. On the one hand, researchers and parents were collaborating to develop a holistic understanding of the child's social situation of development. Second and equally important was to develop a collective activity setting where the child could feel motivated to bring their learnings and also get inspired by other children's learning. Vygotsky (1998, p. 201) explained that "it is assumed that independent solving of the problems only and exclusively is indicative of the mind". The data from the focused child Lexi shows that her problem-solving abilities and her motive orientation changed as she observed other children's participation in the activity setting. Children in the Conceptual PlayWorld were able to express their emerging and existing understandings in a trusting relationship with the storyteller. A robust understanding of the child's social situation of development helped the research team to think carefully about the problem situation which children of a particular cultural age period would find engaging and motivating.

The consistent focus on the child's social situation of development and their maturing psychological function helped to make assessment in the Conceptual PlayWorld a responsive and sensitive process that informed pedagogy. The child and her family were collaborator in this educational experiment thus they were sharing localised situated and unique context of their child's learning. This helped story teller

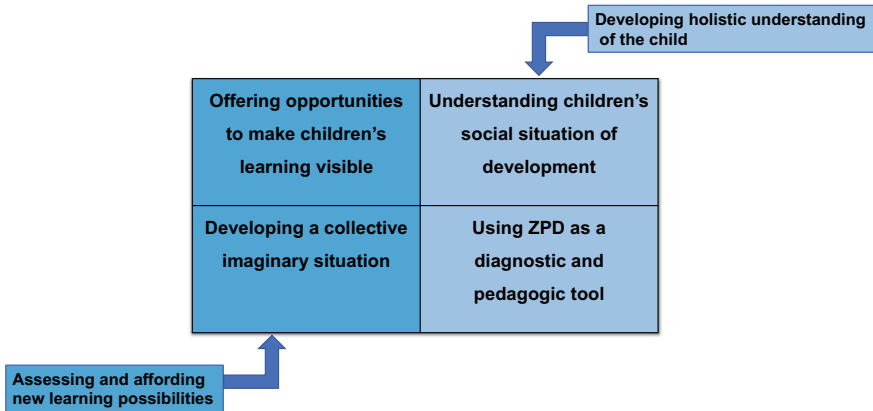
and researchers to have a more authentic assessment of child's developing psychological functions (of imagination and problem solving) and the science concept of lever which was the focus of this Conceptual PlayWorld I.

One of the main characteristics of the Conceptual PlayWorld is to bring together children's emerging psychological function of imagination, problem-solving, their affective expressions all as part of this new condensed practice. The introduction of an 'ideal' form (Vygotsky, 1998) of practice that could engage children in gradually learning of science concepts was possible by developing a robust understanding of children's social situation of development and their unique relationship with the world. In the case examples mentioned here, the child's access to farm life, child's capability to engage in mature role play (cultural age period) and offering a problem scenario within children's play narrative helped in making their concept learning visible. The focus in weaving pedagogy and assessment then is not on slicing children's individual psychological functions but rather see an emerging relationship between them. The interrelationship between higher psychological functions viz. problem solving and imagination was visible in the example. Thus, the approach here is to think about the development of a 'psychological structure' (Chaiklin, 2003) that strengthen relationship between set of psychological functions.

## 4.10 Conclusion

The model presented (Fig. 4.1) shows an emerging conceptualisation of children's assessment informed by cultural-historical theory. Conceptual PlayWorld as an educational experiment creates condensed activity setting that amplifies children's could be seen as an intervention that builds on the spirit of this message. This idea aligns with Drummond's (2003, p. 13) claim that as a part of teaching-learning process assessment must "enrich their lives, their (children) learning and development" (p. 13).

One of the first steps we must take is to acknowledge that the relationship between the "chronological age and the standardised age of the child...is only the first step along the way towards diagnostics of development" (Vygotsky, 1998, p. 200). The focus of assessment should be on new-formations as they emerge. A keen observation of child's social situation of development can alert us to the basic contradiction between the child's current capabilities (as manifested in the actually developed psychological functions), the child's needs and desires, and the demands and possibilities of the environment. In the Conceptual PlayWorld as the child engages in different tasks or problem solving within the collective imaginary situation it results in the formation of new functions or the enrichment of existing functions. Conceptual PlayWorld conceptualises assessment as a practice that allows the use of auxiliary tools and create condensed learning opportunities thus producing best performance. Instead of assessment models that looks at previous learning, the cultural-historical assessment presented here demands us to look at the past, present and future together as a focus of pedagogy. Assessment thus is not separate from learning but following an



**Fig. 4.1** Figure representing the assessment practice model in the Conceptual PlayWorld

educational experiment model it integrates pedagogy and assessment in developing a transformative and collective imaginary situation that could support children's concept learning.

**Acknowledgements** We would like to acknowledge the funds received from the Australian Research Council [FL180100161] for the establishment of the Conceptual PlayLab and the programmatic research undertaken.

## References

- Baird, J. A., Hopfenbeck, T. N., Newton, P., Stobart, G., & Steen-Utheim, A. T. (2014). *State of the field review: Assessment and learning*. Norwegian Knowledge Center for Education/Oxford University Centre for Educational Assessment.
- Bozhovich, L. I. (2009). The social situation of child development. *Journal of Russian and East European Psychology*, 47, 59–86.
- Bruner, J., & Haste, H. (1987). *Making sense: The child's construction of the world*. Routledge.
- Carr, M., Mitchell, L., & Rameka, L. (2016). Some thoughts about the value of an OECD international assessment framework for early childhood services in Aotearoa New Zealand. *Contemporary Issues in Early Childhood*, 17, 450–454. <https://doi.org/10.1177/1463949116680705>
- Chaiklin, S. (2003) The zone of proximal development in Vygotsky's analysis of learning and instruction. In A. Kozulin, B. Gindis, V. S. Ageyev, & S. M. Miller (Eds.), *Vygotsky's educational theory in cultural context* (pp. 39–63). Cambridge University Press.
- Daniels, H. (2001). *Vygotsky and pedagogy*. Routledge.
- Davydov, V. V. (1962). An experiment in introducing elements of Algebra in elementary school. *Soviet Education*, 5(1), 27–37.
- Davydov, V. V. (1964). On changing the content of primary school instruction. *Soviet Education*, 7(1), 27–35.
- Davydov, V. V. (1998). The concept of developmental teaching. *Journal of Russian & East European Psychology*, 36(4), 11–36. <https://doi.org/10.2753/RPO1061-0405360411>



- Drummond, M.J. (2003). *Assessing children's learning*. David Fulton.
- Ellis, R. (2000). Task based research and language pedagogy. *Language Teaching Research*, 4(3), 193–220.
- Erickson, F. (1996). Going for the zone: The social and cognitive ecology of teacher–student interaction in classroom conversations. In D. Hicks (Ed.), *Discourse Learning and Schools*. Cambridge, Cambridge University Press.
- Feuerstein, R., Rand, Y., & Hoffman, M. (1979). *Dynamic assessment of retarded performers*. University Park Press.
- Feuerstein, R., Rand, Y., Hoffman, M., & Miller, R. (1980). *Instrumental enrichment: An intervention program for cognitive modifiability*. University Park Press.
- Fleer, M. (2018). Conceptual Playworlds: The role of imagination in play and learning. *Early Years*, 41(4), 353–364. <https://doi.org/10.1080/09575146.2018.1549024>
- Fleer, M., Fragkiadaki, G., & Rai, P. (2020). Methodological challenges of studying children in a living laboratory: Case example of Conceptual PlayLab. *Cultural-Historical Psychology*, 16(3), 47–59.
- Fleer, M., & Richardson, C. (2004). Mapping the transformation of understanding. In A. Anning, J. Cullen, & M. Fleer (Eds.), *Early childhood education: Society and culture* (pp. 119–136). Sage.
- Gallimore, R., & Sharp, R. (1990). Teaching mind in society: A theory of education and schooling. In L. Moll (Ed.), *Vygotsky and education: Instructional implications and applications of sociohistorical psychology* (pp. 175–205). Cambridge University Press.
- Gee, J.P. (2007). *Social linguistics and literacies: Ideology in discourses*. Routledge.
- Gipps, C. (1994). *Beyond testing: Towards a theory of educational assessment*. Falmer Press.
- Gipps, C. V. (1999). Socio-cultural aspects of assessment. In P. D. Pearson, & A. Iran-Nejad (Eds.), *Review of research in education* (Vol. 24, pp. 355–392). American Educational Research Association.
- Graue, M. E. (1993). Integrating theory and practice through instructional assessment. *Educational Assessment*, 1, 293–309.
- Hedegaard, M. (2002). *Learning and child development: A cultural-historical study*. Aarhus University Press.
- Hedegaard, M. (2005). *Radical-local teaching and learning: a cultural-historical study*. Aarhus University Press.
- Hedegaard, M. (2008a). Developing a dialectic approach to researching children's development. In M. Hedegaard & M. Fleer (Eds.), *Studying children: A cultural-historical approach* (pp. 30–45). Open University Press.
- Hedegaard, M. (2008b). Children's development from a cultural–historical approach: Children's activity in everyday local settings as foundation for their development. *Mind Culture and Activity*, 16(1), 64–82.
- Hedegaard, M. (2012). The dynamic aspects in children's learning and development. In M. Hedegaard, A. Edwards, & M. Fleer (Eds.), *Motives in children's development: Cultural-historical approaches* (pp. 9–27). Cambridge University Press.
- Hedegaard, M., & Fleer, M. (Eds.) (2008). *Studying children: A cultural-historical approach*. Open University Press.
- Lidz, C. S. (1990). The preschool learning assessment Device: An approach to the dynamic assessment of young children. *European Journal of Psychology of Education*, 2, 167–175.
- Lidz, C. S. (1997). Dynamic assessment: Psychoeducational assessment with cultural sensitivity. *Journal of Social Distress and the Homeless*, 6(2), 95–111.
- Lunt, I. (1993). The practice of assessment. In H. Daniels (Ed.), *Charting the agenda* (pp. 145–170). Routledge.
- Mercer, N. (2000). *Words and minds: How we use language to think together*. Routledge.
- Moll, L.C. (Ed.) (1990). *Vygotsky and Education: Instructional implications and applications of sociohistorical psychology*. Cambridge University Press.

- Moss, P., & Urban, M. (2017). The Organisation for economic co-operation and development's international early learning study: What happened next? *Contemporary Issues in Early Childhood*, 18(2), 250–258.
- Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. Oxford University Press.
- Rogoff, B. (1998). Cognition as a collaborative process. In D. Kuhn, & R. S. Siegler (Eds.), *Cognition, perception and language* (Vol. 2). *Handbook of child psychology* (5th ed., pp. 679–744). Wiley.
- Rogoff, B. (2003). *The cultural nature of human development*. Oxford University Press.
- Shepard, L. (1992). What policy makers who mandate tests should know about the new psychology of intellectual ability and learning. In B. Gifford, & M. O'Connor (Eds.), *Changing assessments: Alternative views of aptitude, achievement and instruction*. Kluwer Academic.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Vygotsky, L. S. (1987). *The collected works of L. S. Vygotsky* (Problems of General Psychology, Including the Volume Thinking and Speech). Plenum Press Kluwer Academic.
- Vygotsky, L. S. (1994). The problem of the environment. In R. V. D. Veer, & J. Valsiner (Eds.), *The Vygotsky reader* (pp. 338–350). Blackwell Publishers.
- Vygotsky, L. S. (1997). *Educational psychology* (R. Silverman, Trans.) (Orig. 1926) St. Lucie Press.
- Vygotsky, L. S. (1998). *The collected works of L. S. Vygotsky, "Child Psychology."* Vol 5, (trans. M.J. Hall & R.W. Rieber, Ed. English translation). Kluwer Academic and Plenum Publishers.
- Wells, G. (1999). *Dialogic inquiry: Towards a sociocultural practice and theory of education*. Cambridge University Press.
- Wertsch, J. V. (1984). The zone of proximal development: Some conceptual issues. In B. Rogoff & J. V. Wertsch (Eds.), *Children's learning in the "zone of proximal development"* (pp. 7–18). Jossey-Bass.

**Dr. Prabhat Rai** works as Senior Research Fellow at the Conceptual PlayLab, Monash University. He led research on children's concept formation in family and community settings. With a PhD from the University of Oxford, he has previously worked in academic and leadership positions in India, Bhutan and the UK. He has extensive experience in researching communities, early years settings and leading teacher education programmes.

**Laureate Professor Marilyn Fleer** holds the Foundation Chair of Early Childhood Education and Development at Monash University, Australia. She was awarded the 2018 Kathleen Fitzpatrick Laureate Fellowship by the Australian Research Council and was the former President of the International Society of Cultural–Historical Activity Research (ISCAR). Additionally, she holds the positions of an honorary research fellow in the Department of Education, University of Oxford, and a second professor position in the KINDKNOW Centre, Western Norway University of Applied Sciences, and has been bestowed the title of Honorary professor at the Danish School of Education, Aarhus University, Denmark. She was presented with *the 2019 Ashley Goldsworthy Award* for Outstanding leadership in university–business collaboration.

**Dr. Glykeria Fragkiadaki** is Senior Research Fellow at Monash University, Australia. She has an academic background at European Universities as well as extensive teaching experience as an Early Childhood Educator and Director. She has also acted as OMEP's Patras Local Committee Secretary in Greece and been a tutor to several Professional Development Programs for Early Childhood Educators. Her research focuses on pedagogy and teaching in the early years, STEM education in early years, and cultural–historical theory and methodology. Her research work has been published in several international journals and book chapters as well as presented in international and national conferences.

# Chapter 5

## E-portfolios to Capture and Share Moments of Learning



Lisa Kervin, Sue Bennett, and Cathrine Neilsen-Hewett

**Abstract** Portfolios are used as an assessment document to showcase children's learning. E-portfolio systems have been introduced into early year's education and as yet have not been a focus of in-depth research that moves beyond measures of uptake. These forms of digital documentation capture children's learning but raise questions around what is captured and how the interpretations educators make through the stories they tell, and how these technology platforms can be used to strengthen practice while also communicating with families. In this chapter, we share insights from a project designed to gather insights into the processes and practices of using Storypark in two early childhood settings. We aim to make visible the often unintended or unseen consequences of its use. Drawing upon observations within the services, interviews with educators, and analysis of Storypark entries, we examine the contexts, interpretations, and priorities of the services alongside the use of Storypark. Our analysis of data shows patterns of engagement to understand how digital tools influence what 'counts' as a learning experience and how learning is reported to parents and caregivers to enable us to begin to explore how such technologies are influencing children's experiences of learning.

### 5.1 Introduction

High quality early childhood environments have educators who are highly skilled in observation, documentation, and reflection. These skills are acknowledged to provide

---

L. Kervin (✉) · C. Neilsen-Hewett

Early Start Research/School of Education, University of Wollongong, Wollongong, NSW, Australia

e-mail: [lkervin@uow.edu.au](mailto:lkervin@uow.edu.au)

C. Neilsen-Hewett

e-mail: [cnhewett@uow.edu.au](mailto:cnhewett@uow.edu.au)

S. Bennett

Faculty of Arts, Social Sciences and Humanities, University of Wollongong, Wollongong, NSW, Australia

e-mail: [sbennett@uow.edu.au](mailto:sbennett@uow.edu.au)

important outreach and communication to families, demonstrating knowledge of individual children's developmental progress, which in turn informs daily routines, intentional practices, and the set-up of the learning environment. While the Australian Children's Education and Care Quality Authority (ACECQA) acknowledges the importance of documentation to "...support and extend children's thinking, learning and development" (nd p. 1), they are not prescriptive about how observation and documentation are completed.

Educators are encouraged to explore techniques to capture their observations in ways that work best for their practice and for their children, families, and communities (ACECQA, nd p. 1). However, observations of learning in early childhood contexts have typically been documented in paper-based formats. Such forms include, but are not limited to, notes and reflections, scrapbooks and portfolios, and printed photographs. This documentation has served an important role in assessment practices and communication between educators in the service and families while also informing an ongoing cycle that evaluates children's learning to inform subsequent planning. These documents provide important records of learning which through reflection and evaluation lead to informed pedagogical decisions and celebrations of children's learning.

Observations of early childhood learning tend to be open-ended and collaborative, with a focus on dispositions and processes of learning. Social and cultural contexts of learning are important and aspects, such as group dynamics and interactions between adults and children and between children, are critical (Fleer, 2010). Current practices have seen observations move away from checklists and tests towards methods of documentation that value context and acknowledge diversity (Pacini-Ketchabaw & Pence, 2011) while encouraging educator reflectivity, engagement and opportunities for learning continuities. Further, opportunities to capture children's voices have been promoted (Nilsson et al., 2015) with evidence that children from as young as three are capable of organising and reporting on experiences that they can relate to (Roth et al., 2004).

Educators play a central role in noticing and documenting observations. Observing, recording, and analysing children's learning behaviours require the educator to have skills that enable them to not only identify instances but also interpret these in meaningful ways (Martin, 1999). A key challenge for educators, however, is that periods of observation usually happen simultaneously with direct interactions with children. This means that educators are therefore rarely provided with an uninterrupted time to record specific moments of practice for individual children. While educators can develop observation skills and compile different ways to document and interpret observations, there is a tension between being present in the learning environment and capturing moments to share and inform future practice.

The nature of documentation is changing with the growing trend in early childhood services to use commercial services providing digital tools and online platforms to record learning. There are a range of digital platforms that educators identify: Kindy Hub, Pencil or PicCollage, Kinderloop, and Storypark (Harrison et al., 2019). These digital formats enable video, audio, photographs, written annotations, and reflections to be combined in ways that can be shared quickly and easily. Such modes have

helped to provide concrete and visible examples of children's learning as contexts and relationships, and the dynamic nature of learning is acknowledged (Dockett & Perry, 2016). These digital platforms are positioned as an easy way for educators to track children's learning while also capturing evidence to be communicated to families.

These digital multimodal forms for documenting experiences offer new possibilities to identify, capture, and value children's learning. While taking photographs of children's learning is not new, the ability to capture evidence using multiple modes (including for example, written language, spoken language, still and moving visual images, and audio) and share this quickly with key stakeholders offers new possibilities. The combination of modes enables the creation of more complex and more purposeful texts (Kress & van Leeuwen, 2006). However, it is important to understand how meaning is conveyed through the various modes and how these modes can work together to convey information to the intended audience (Jewitt, 2009).

Digital platforms can be utilised to forge strong connections between the early childhood educational and home learning contexts. Recent work by Higgins and Cherrington (2017) speaks to the role of e-Portfolios in fostering parent-educator connectedness; while many communication efforts between educators and parents were viewed as informative, opportunities for online conversations, and reciprocal interaction were positioned as particularly beneficial to relational quality. The potential benefits of these platforms for fostering children's learning, however, appear underutilised, suggesting the need for more active scaffolding and support for both educators and families. The limitations of these platforms to create shared learning contexts were echoed by Stratigos and Fenech (2021) who found communication to be mostly documentary and diarising of activities, lacking a deeper analysis of the learning opportunities afforded across the day. The potentialities of these platforms to cement consistent and meaningful connections across key developmental contexts highlight the need for additional research to understand how these platforms are used and the potential flow on effects for young children's learning and development.

There is little evidence-based or research-informed guidance to date about how these platforms can best be used or the effects of this use. In a commissioned review of assessment practices in early childhood contexts (Harrison et al., 2019), several digital platforms were identified by educators with mixed feelings. While educators reported that digital platforms are flexible and creative and enable easy sharing of information (mainly photos and information) with families, while also creating a shared database of information among colleagues, they also raised concerns about ownership of sensitive data, equity of access to information for all families, and the potential for children to engage with generated material. There is need for additional research in the use of these platforms given concern that early childhood assessment practices run the risk of being guided by commercial drivers rather than by the expertise of the early childhood profession. Further, an e-portfolio platform's social validity (Bagnato et al., 2014)—that is its ease of use, accessibility, acceptability, and suitability for supporting communication and collaboration needs across stakeholders—is important considerations in the selection and uptake of any digital tool.

For the purposes of this chapter, we select one digital platform identified by educators and examine how this e-portfolio is used in two services. Harrison and colleagues (2019) described:

Storypark was used by some educators as a daily diary. In some services, educators reported, Storypark was considered a comprehensive tool. It was used to record children's individual goals, and it was also seen to assist with the development of transition to school statements. There were some concerns raised with Storypark by educators, including that it was time-consuming and takes educators away from children; and that the layout is problematic. (p. 58)

Storypark is a tool designed to “record and communicate learning as it happens via photos, video, audio, and observations within a secure online environment” (Storypark.com.au). It is accessed as an app and draws upon affordances of mobile devices including the camera (still and video), ability to audio record, and provide written text through the keyboard. Storypark is marketed as a tool that enables educators to receive instant feedback and plan new ways to extend children's unique interests and abilities. Parents and family members can be involved in their child's learning as they access and create their own recordings and shared photos, videos, and comments on a private online network. The platform is described on its website as follows: “Everything we do is childcentric: Storypark works to make a difference—not just a dollar... Our approach comes with a sincere respect for children, including their privacy and contribution”. (Storypark.com.au)

Storypark is essentially an online scrapbook, which allows both early childhood education teachers and parents to regularly interact over a child's learning. Learning stories can be instantly placed online, from where parents remotely access and comment at times and places convenient for them. Hooker (2017) found that e-portfolios can lead to more frequent entries as teachers feel motivated to produce entries given they have a firm sense of audience and know that their entries will be read. Further, there is indication that children can become more involved in conversations about their learning as they draw upon stimulus (in particular, video) in their home context (Hooker, 2019). However, the rapidity of this documentation and the external pressures felt by educators means these opportunities are often missed (White et al., 2021).

Originating in New Zealand, Carr and colleagues developed the “learning story”, a sociocultural approach to assessment which supports educators to track, assess, and reflect upon children's learning dispositions and engagement in early years contexts. This approach was seen as a way for educators to avoid more formal prescriptive assessment methods, as they produced something helpful for documentation of practice, culturally sensitive, interesting for families, and supportive for learners (Carr, 2001; Carr et al., 2000). The learning story is a narrative account of a learning instance that has taken place. The observing educator records the instance as a story. The story can involve individuals or groups. The educator can reflect on the story as they interpret and analyse the learning that has taken place. In digital contexts, photographs, video, and audio files can accompany the written story which enables both visual and audio connections, making the story accessible to the child/children and families, and potentially optimising the opportunities for revisiting. Learning stories have

been endorsed as a comprehensive assessment resource to document and showcase children's learning (Carr et al., 2019). Carr (2001) describes that learning stories are developed through a dialogic process where the documenting educator discusses observations and interpretations with colleague(s) and child(ren). Loggenberg (2011) found that learning stories were the most common form of assessment in early childhood contexts, yet Niles (2016) identified that some educators struggled to identify perceived needs and how to document these. While suitable for any early childhood context, educator bias could lead to specific interpretations of events and learning (Harrison et al., 2019).

Carr and colleagues (2019, p. 137) provide a useful scaffold for how learning stories can support collaborative learning journeys between children, educators, and families. The authors identify four key components of a learning story which include: (1) a description of an event, including the context and supports; (2) an analysis of the learning with the curriculum in mind; (3) a "what next"? Or collaborative "How might we progress this learning"?; (4) and an opportunity for revisiting and reviewing by children, kaiako (teachers), and whānau (parents and family). This structure not only values the active involvement of children and the use of children's own words in validating the story (Wanoa & Johnson, 2019), but it also positions the learning along a continuum of experience, inviting ongoing reflection and planning while providing guidance and scaffolding for familial engagement, input, and opportunities for reciprocal communication.

## 5.2 Our Project

The study design was informed by a multimodal social semiotic perspective on learning, (Kress, 2010; Lemke, 1987) and an ethnographic approach to educational enquiry (Kervin et al., 2015). A focus on social semiotics enabled us to focus on social interactions and how educators used Storypark to construct systems of meaning. In doing so, we look to 'meaning' as an active process where actual instances motivate the production of digital learning stories. An ethnographic approach enabled us to embed ourselves within actual settings to observe and understand how these systems of meaning were enacted through lived, everyday experiences in the actual setting and then represented in the digital environment. We obtained permission for this research from both the university human research ethics committee and the governing bodies of the two early childhood services. Pseudonyms are used for all participants in this chapter.

We visited these two services over a month to observe the educators and children during their regular routines as we focused on what motivated the digital capture of content for Storypark and how this was managed by educators and children in the environment. Both services are guided by the *Early Years Learning Framework* (Department of Education & Training, 2009) and were part of one Early Childhood provider (with over 130 services) and had planned educational programmes that are based on the interests, strengths, and learning needs of the children. Both services

were rated “Exceeding National Quality Standard” through measures employed by the NSW Department of Education and were identified by the Early Childhood provider as two services who were using Storypark in effective ways.

Service A is located in a suburb of a large regional city. It is a three-room, 52 place, long day care service catering for children aged from six weeks to five years. Children typically attend the service between two to five days for up to 10 h per day. The key focuses for this service were sustainability, *Circle of Security* (Powell et al., 2009), and the methods of *Marte Meo*, which is a programme from the Netherlands focused on supporting children’s development during daily moments of interaction (Marte Meo International, n.d.). Each of these focuses work to empower the child as the educator works within the realm of child experience and initiation. During our observations one digital camera was available. This camera was in one of the educator’s pockets, and it was this educator who took responsibility for the capture of images to be used for Storypark entries.

Service B is located in a suburb of the state’s capital city. It is a single room preschool catering for 25 children aged three to five years. The preschool follows primary school term dates and operates between 8:30 and 3:00 pm. The key focuses for this service included the *Circle of Security* and *The Educaring Approach* (Gerber et al., 2013) which positions infants and toddlers as equal members in relationships with adults. Central to both approaches is a focus on trust between the educator and child, time for uninterrupted play, and opportunities to interact with others. During our observations, two digital cameras were available to educators. One was hung on a hook just outside the door to the outside space, and the other was hung near the reading area in the inside space. Educators accessed these when they saw something they wanted to capture.

We conducted semi-structured interviews with seven educators across the two sites to discuss and understand their beliefs and practices in their use of Storypark. We focused on how the use of Storypark connected with the service’s goals and priorities for learning. We conducted ethnographic observations for three or four full days in each service spaced over a month to focus on how Storypark was used within each service. During these observations, we took photographs and made fieldnotes as we recorded how the Storypark tool was used, and the learning that was captured. We then shared examples of Storypark use from our observations with the educators to seek further explanation in semi-structured interviews. Further, we were also able to access the Storypark entries produced in the same weeks as our observations. Our analysis of Storypark data in these services showed Service A posted an average of twenty entries per week, and Service B posted an average of eighteen. We then analysed these entries to identify trends in the types of content and stories shared and examined our qualitative data to identify trends and illustrative examples.

Across these services, there appeared to be clear reasons for why educators engaged with the Storypark tool. For these services, it was a tool selected by their governing body. Each of the educators also identified professional learning they had undertaken and challenges and limitations of the Storypark platform. These reflections pose some considerations for the enablers and constraints of the tool; however,



for the purposes of this chapter, we focus our attention on instances of use within day-to-day practice.

Storypark was identified by educators as a tool for engaging with families that would allow them to understand what was happening in the service and how their child was engaging with learning experiences. Amanda described how she thought of Storypark, “I’m really mindful of the families, what our documentation is for, who is reading it, and the value they’re getting out of it”. With this though comes an expanded audience. Jane explained, “...now when we write observations... you know that grandma and grandpa, aunts and uncles ... all reading it!”. Nicole observed, “parents ... they just want to see their children’s pictures” and identified this as a key motivator to how she used Storypark.

Storypark was seen to be a reciprocal communication platform where key stakeholders (families, educators, selected external services, and extended family) could create and respond to posts. Natalie identified the speed of the platform for sharing information explaining, “... they see what we’re posting ... they’re up to speed, we’re up to speed... it’s a two-way thing”. In this way, the tool supported these services to build relationships with families. Amanda shared, “I find the relationships are stronger by using it ... getting more of the whole child ... which I don’t think without the platform, that has never happened like that before”. Natalie explained that in the learning stories families were able to see “the philosophy” underpinning the experiences offered in a way that was connected to their children and responsive to the context of the service.

In the remainder of the chapter, we draw upon our field notes, videos, and photos taken during our observations and interviews with the educators to identify instances of capture and to understand the motivation for these digital documentations of children’s learning. We also use these to examine opportunities, and these educators have taken to engage the affordances of the digital narrative. We now present three illustrative examples of practice from our data which we will then discuss to identify questions for research and practice.

### **5.3 Illustrative Examples of Practice**

Our analysis of the Storypark entries, coupled with our ethnographic data, revealed distinct patterns in how Storypark is used across these services:

- To document, share, and emphasise key moments of practice;
- To notice, showcase, and share individual learning achievements; and
- To identify extensions of intentional practices into play scenarios.

The following have been chosen as typical examples of these key practices. Each example presents a brief description synthesised from contemporaneous notes made by the researcher observing, followed by the image and text that was shared on the platform, followed by accounts drawn from the educators involved.

### 5.3.1 Documenting, Sharing, and Emphasising Key Moments of Practice

#### Example 5.1: Child Protection Week (Service A)

*Researcher's description: The children gather together in a shared space. Michelle (an educator) talks with the children about "Child Protection Week" and lets them know she has already shared information about this week with their parents by sending them an email. The children are asked "what is the most important job I and [other names of educators] do everyday"? Looking after the children and keeping them safe is emphasised. A series of books (written with a child protection focus) is shown to the children and characters in the stories are introduced before one of the stories is read. During this introduction, Caitlin (an educator) takes a photograph of the children and Michelle together to support a post to families letting them know about service activities for Child Protection Week (Fig. 5.1).*



**Fig. 5.1** Capture of group activity for "Child Protection Week" (Service A)

#### Storypark story:

"This week is Child Protection Week. See your email for more information. Each day this week we will be talking about how to stay safe". (Accompanied by photo of the group taken by Caitlin.)

In this instance, Storypark was used to acknowledge an important event in the calendar, *Child Protection Week*. The Storypark platform was used to follow up email communication that had already been sent by the service to families. Michelle reflected that parents would say to her "I want you to tell me everything you do and

I want to take it home with me”. In this spirit, Storypark offered the opportunity to document and share important aspects of practice and occasions as they happened. Michelle further described that “...you don’t want to make it overwhelming, so we choose what we will want to share”. Following up an email by sharing information about the “week” with a Storypark entry showing an aspect of practice was seen to be a meaningful application of a bigger occasion. Posting after the email sent, the message to families that this is an important event worthy of attention. This provides a clear line of communication between specific planned experiences and the families.

In this example, the Storypark entry was appropriate for all families and was shared with the entire parent community. A photograph of the children with an educator, accompanied by a written annotation was mostly documentary serving as a reminder to parents and a snapshot of the event. It appeared that this entry may have been the beginning of a series about Child Protection Week, showcasing the ability of Storypark to build upon a story and generate collective content to emphasise a particular focus. In this way, Storypark served as an opportunity to connect and reconnect with families with key ideas over time, while emphasising the importance of the particular event.

Further, this example serves as documented evidence of the planning around *Child Protection Week* and may also be viewed as “proof” that the focus was taken. The picture taken by Caitlin and shared with the families clearly shows that the children spent time on the topic and used the provided resources (the book series). All the children are gathered in one space, they are all attentive to Michelle and the book she is sharing signalling that this was an appropriate and worthwhile experience for all the children.

### 5.3.2 *Noticing, Showcasing, and Sharing Individual Learning Achievements*

#### **Example 2: Climbing Trees (Service B)**

*Researcher’s description: Millie loves to climb trees. She explains to us that she is trying to climb as high as she can. We notice there are mats on the ground under the tree. Millie explains that those are for “because I climb high”, further explaining “I can only climb the tree when the mats are down”. Over a ten-minute period, we watch Millie climb the tree. A younger child watches through the fence and gets excited when Millie makes progress in her climb. Zoe, a peer in the preschool room, also tries to climb the tree. Natalie (an educator on the other side of the playground) notices Zoe’s efforts and calls out “Up and over, Zoe! Up and over! Like Millie” This is important encouragement for Zoe as it both encourages and shows that Natalie is noticing. For Millie, this serves*

*as affirmation and encouragement. Another educator, Jane, moves over to the tree, she has a camera and takes a picture of Millie in the tree.*

Storypark story:

“Millie continued to climb trees today. She is getting so confident! She climbed higher today than we have seen her before. She enjoyed some time at the top sitting in the tree watching her friends”. (Accompanied by photograph of Millie in the tree taken by Jane).

There are several supportive features in the centre’s environment designed to be responsive to the interests of individual children. Climbing the trees in the outdoor environment was something the children had expressed interest in doing, so the educators put in support to encourage this behaviour safely. In this example, we see how the children’s interest in climbing has been facilitated by climbing frames to help them get up to the tree branches and safety mats underneath should they fall. These are evident in the top right of Fig. 5.2. The image and annotation are used to evidence children’s interest and efforts but fail to capture the rich intentionality and scaffolding and support embedded within the learning experience.

Support for individual learning is evident in the behaviour of the educators within our annotation Millie’s tree climbing got the attention of two educators during this



**Fig. 5.2** Capture of individual activity (Service B)

ten-minute period. Captured in Fig. 5.2 is Natalie whose attention was directed towards the children climbing, indicating monitoring and supervision. Our observations captured the noticing and encouragement from this educator, which was emphasised when another educator captured an image for sharing on Storypark. The awareness from both these educators about what was happening in this outdoor area was both quick and astute. The accompanying annotation demonstrates a broader awareness of Millie's interests and plays behaviours beyond the captured image.

We were able to talk with these educators about the experience. We asked Natalie (who was watching and encouraging) what caught her attention in this instance. She explained that it was “the benefits of risky play, it shows that adults in my world trust me”. For Natalie, it was validation around the decisions that had been made in the learning environment (i.e., both allowing and enabling children to climb trees). When we asked Jane about the play between Zoe and Millie and what motivated her to capture the image, she said, “so those kinds of things are really interesting just for the parents to think about ... [maybe] she likes doing that at home as well? [climbing trees] ... It might be kind of social? [copying behaviours]”. The possible learning connections between the preschool and the home environments were motivators for Jane. In further discussion, Jane explained that when capturing a moment to record and share through Storypark, “you're thinking in real time”, but then identifying “what's really happening” becomes evident upon reflection. In this instance, she explained, “it's interesting that they're drawn to each other ... that one's really demanding and that one's following and seeing similar patterns ... I need to think about it for them as individuals within the one interaction”. These two different perspectives show just how differently two educators interpret the one event.

Interestingly, in the Storypark entry that followed this experience, it was Millie's climbing that was profiled in the story written by Jane. This is interesting, in that, it is somewhat different to the initial account that Jane offered when we spoke with her about this instance. This prioritisation of the event or activity and the minimisation of the ‘learning behind the story’ is not atypical of educators approaches to digital documentation (e.g., Stratigos and Fenech 2021; White et al., 2021). This may in part be explained by the pressures placed on educators to ensure they capture and include as many children as possible in the daily account of events (White et al., 2021). The story concluded with Millie being able to watch her friends, not that her friends were actually trying to mimic her behaviours and the positive and encouraging role she played in motivating new learnings for other students. While it is understandable that a story can only capture so much information, given the conversations we had with these educators and our own observations of their interactions with the children, we wonder why it was this perspective that was captured. We also wonder what Millie and Zoe may have told us about what was happening in this experience as they identified their learning achievements?





**Fig. 5.3** Catching rain (Service A)

### **5.3.3 Identifying Extensions of Intentional Practices into Play Scenarios**

#### **Example 3: Catching Rain (Service A)**

*Researcher's description: Having recently experienced a drought, the need for and celebration of any rain is a daily conversation in this service. Each morning, we have seen the children and their educators talk about water. They check the rain gauge and see how much rain has fallen overnight. We hear the educators and children talk about how important rain is for the gardens and how the mulch on the soil works to keep the soil moist. The previous week the children conducted an experiment where they used different containers to collect rain.*

*During a visit, one morning we see Caitlin (an educator) sitting on the side of the sandpit, eleven children are busily playing around her. There are many different activities going on. Two children are eagerly planning how they might use some of the sand play equipment (buckets and containers) to have multiple objects to "catch rain", expanding the experiment they conducted the week before. Caitlin notices this, she reaches into her pocket to remove a camera*

*and takes some footage of the children in conversation. She also captures a still photograph of the play (Fig. 5.3).*

Storypark story:

“Next week children in the PSR have decided to have dress up days to help raise money for farmers affected by the drought. For each day, your child would like to come to preschool in ‘dress up’ clothes please donate a gold coin in our money box. This is completely voluntary. Many of our children have been conducting experiments to catch rain, if only we could send it to the farmers!” (Accompanied by still photograph of children at play).

The topic of this story was connected to a real-life issue which affected many communities across the country. The connection to a real-life issue was important for the educators in this service and demonstrated through a planned sequence of experiences focused on the drought. Further, these children had personal experiences of the drought through home, local community, and their extended families, and this play was an opportunity to connect children’s learning about the natural world around them to personal response. In this way, making meaning was an active process as the children drew on their real-world knowledge, built upon this through intentionally planned experiences, and demonstrated their understanding and interpretations of this knowledge through play.

The educator (Caitlin) noticed a transfer of “knowledge” from an episode of intentional teaching into a play scenario. Caitlin’s skills of observation were refined and skilled, she was able to identify this specific play while observing a large group with multiple activities happening. The play that caught her attention was initiated by the children during free play and served to support the call for action in the Storypark story. While the images—which included evidence in two forms (moving and still image) to support the story—provides the children with clear validation that what they are doing is important and has been noticed, the annotation does not reflect the deeper learnings and is instead used to simply remind parents of preschool events.

Interestingly, what is shared through the Storypark story is an educator’s interpretation of a call to action from the children’s play (dressing up and fundraising venture). While this communication with families validates the play as a demonstration and extension of learning, again we wonder what the children’s interpretation of their play may be? We also wonder what was captured in the video dialogue and what may have been done with this documented evidence of learning?

## 5.4 Discussion

Formative assessment practices enable educators to record, share, and make judgments about a particular aspect of learning. Observation and documentation are central to child-centred pedagogy and a natural practice for educators. It is important

to note that what educators see and what they report “...may be influenced by the time of day, their relationship to the child, and the nature of the task or activity they have observed” (Harrison et al., 2019, p. 68). While it is important to note these limitations, it is also useful to consider the affordances and social validity (Bagnato et al., 2014) of e-platforms like Storypark and the affordances offered to processes of observation, documentation, and sharing.

Taking a photograph of a child or their work can communicate a powerful message to children that “you and what you are doing matters; and this tells us something about you”. (Hope, 2017, p. 32). With this comes significant potential for reflection, in collaboration with children, families, and educators, with the perspectives, each of these stakeholders have used to analyse what is happening to inform subsequent planning and practice. The learning stories approach (Carr et al., 2019) values learning that is collectively planned for by children, educators, *and* families. The photographs, video clips, and interpretive narratives presented in this chapter, while capturing rich learning experiences, fail to optimise opportunities for shared input, or for reflective discussions around learning supports and children’s learning trajectories. Our field notes coupled with our rich interviews with educators showed that across both services educators were highly intentional, reflective, responsive to children’s voices, interest, and developmental capacities while responding to the learning opportunities of the educational context. These insights, priorities, and learning affordances were not reflected in the ‘learnings’ captured in the Storypark extracts. Consistent with arguments forwarded in recent publications (e.g., Stratigos & Fenech, 2021; White et al., 2021), the educators across these two services appeared to be dictated by perceived parental need, the privileging of adult voices and were challenged by competing work demands and documentational requirements. We also noted a level of uncertainty surrounding how these platforms could be used to best meet the needs of children *and* families.

As such, we propose that when composing entries within an e-portfolio platform, educators should be guided by questions such as:

- What does the example tell us about the child’s interests, knowledge, and dispositions?
- What learning is the child demonstrating?
- What is the scenario of the example and how is the child responding?
- What might the child/ren tell you about what is happening?
- What learning processes are evident (e.g., problem solving, collaborating)?
- What does the example indicate about group dynamics and interactions?
- What does it share about power relations, equity, diversity, and inclusion?
- What information does it give about the learning environment and opportunities within?
- What modes have been/could be used to communicate this learning?

As our project suggests, we should anticipate there will be a diversity of ways in which children’s learning is observed and documented, and this will be shaped by who and what the documentation is for. This is closely connected to the understanding of the potential of the software, technology, and the service’s ethos in how this is



used. Who captures the data matters? The different perspectives of those involved in the learning—the child, the educators, the families—provide unique insights into instances of learning. It is critical for educators to carefully consider how any evidence and subsequent documentation assists in (i) planning for subsequent learning experiences and (ii) communicating about children’s learning. Collected evidence and the interpretation of this should capture children’s understandings, learning gains, social enablers, and dispositions. While each of the examples we captured were about the children and their learning, the voices of the children and their perspectives about their learning were not the focus.

It is important to note the implied focus on ‘storying’ through the Storypark platform. Stories allow for descriptive accounts of an event or experience as they document what happens for one child or a group of children. By nature, stories lead to the creation of documentation that is open-ended and allows educators to record all behaviours that they notice. Detail then becomes important to understand not only the activity observed but the context within which it occurred. Dunphy (2010) argues that narratives should be used as a tool for reflection and they need to be created, reflected on, and shared with others to build understanding and shared interpretation. These educators reported that they could see the value and relevance of the Storypark e-portfolio tool for their everyday work in their services. What was less clear was their ability to embrace all the affordances of the tool and to move beyond written text and accompanying photograph formats. Furthermore, many of the captions cited under the images shared throughout this chapter neither invite evaluation nor encourage discussion. This highlights the need for the development of effective frameworks of practice, like those developed by Carr et al (2019) which can be extended to support educators’ decisions around what learning should be captured and then shared on digital platforms, how to scaffold a combined evaluation of that learning by children, educators, parents and carers, and then how best to position this within the broader learner journey.

Digital platforms enable the production of multimodal texts that extend ‘storying’ beyond the realms of traditional print-based possibilities (Kress & van Leeuwen, 2006). A platform like Storypark also allows for the capture of information in multiple modes. To enable this, educators need to understand the more nuanced possibilities of each of the modes—written text, still and moving images, and audio—and how these might work together to produce innovative and meaningful digital media stories. Creating digital stories through a platform like Storypark brings together unique skills from being able to observe unique learning opportunities to also being able to represent these using essential aspects from understanding of the modes and how to best represent these in digital platforms. It is possible that the one piece of evidence may be able to be treated in multiple ways as all angles of the story are told, capturing the perspective of the child as the learner while providing information for parents and educators that can be used to support learning continua, shared discussions, and learning extensions.

Educators observe children during learning experiences as part of regular practice, and our project demonstrated differences in what was documented resulting from an individual educator’s understanding of key moments of learning. The educator

plays a critical role: to notice, to capture, to interpret, and to share. This then raises questions about what it is that is noticed and what is not, what is captured and what is not, and what is shared and what is not. When we consider the purposes, our educator reflections point to ‘messages’ they would like to communicate to parents and families about what is important in children’s worlds and in the worlds of the centres they attend. Example 1 highlights the importance of child protection, both as a responsibility of all carers, but also provides evidence that this work has been done by the centre. Example 2 conveys the value of risky play, while demonstrating care and supervision using the image to show the supportive provisions within the learning environment. Example 3 communicates an opportunity to participate in dressing up and fundraising for a cause important to the community, while showing how learning is taking place through transfer of this topic into play. While these examples present real opportunities for educators to demonstrate how they respond to and build upon children’s interests, while also satisfying their responsibilities for care and education, these have not been realised or reflected in the captions. The potential for disparities between educator intentionality and online pedagogy and documentation was really magnified through this data.

These considerations highlight further possible tensions and challenges that emerge from these practices. While selected moments shared in e-portfolios (online) formats can enable parents and families to feel more connected to a child’s learning, there is need to consider what extent are these moments curated to tell a preferred narrative? And what other narratives are captured but not told? And with increased accountability against standards expected (Roberts-Holmes, 2015) might documentation take on a performative edge for educators and services that shifts towards the ‘schoolification’ of early learning? As identified, the use of Storypark by these services was in response to perceived parental need and documentational requirements and what was shared was what parents wanted to know and ‘evidence’ the services needed to capture. Further, taking in critiques of quantification and datafication (Barassi, 2020; van Dijck, 2014), there are ethical risks around the recording and retention of children’s data. Data that is digitally captured and shared creates digital footprints for the children which can lead to subsequent tracing and analysis that may occur. We wonder how aware educators and families may be about this digital datafication and its potential uses?

We also wonder how the perspectives of the children may be incorporated within the digital capture of learning stories. Children can express opinions and perspectives when they are responding to their everyday lives (Nilsson et al., 2015). The ease of capturing multiple modes (through video, photographs, and audio) provides support for young children to focus their attention back to a lived experience enabling them to become an active participant as they share their account of what was happening. E-portfolios need to do more than store and share observations. There is potential for these tools to capture multiple perspectives to enable critical reflection on practice to inform subsequent planning for individuals and groups of children. However, for this to happen, curated information needs to be high quality, objective, and representative of perspectives from all key stakeholders.

## 5.5 Conclusion

This was an exploratory study of practices within two services, and we acknowledge that caution must be exercised in drawing any wider conclusions from the examples presented. The services that participated in our project were both acknowledged as exceeding through the National Quality Standards (ACECQA, 2017). These standards include reference to the use of digital technology for documentation and communication, recognising that collaborative relationships with families that are based on genuine partnership are essential. Platforms such as Storypark have the potential to share information about the service, encourage engagement with a range of activities within the service, and offer additional information and support to families. Critical, though, is that there are shared understandings among educators in a service about children's learning and approaches to curriculum and assessment. Given there is naturally variation in the resources and capabilities across different services, there may be barriers to implementation and good practices that our project has not surfaced.

While in this chapter, we have showcased the decisions these educators have made, we want to highlight too the importance of conversations about learning in what is captured and disseminated through e-portfolio platforms. There is a clear need for educators to think critically and creatively about any choice of assessment tool. Clearly, more research is needed that engages with a diversity of centres and educators and includes children, families and other members of a child's community who could be connected through online platforms such as Storypark. We also need to better understand how digital tools influence what 'counts' as a learning experience and how learning is reported to parents and carers to enable us to begin to explore how such technologies are influencing children's experiences of learning. Dialogue between and among educators, children and families enables negotiation, and exchange of ideas and joint decision-making. As e-portfolio platforms are increasingly adopted and their functionality extended, it is critical that all stakeholders are engaged in shaping how learning is supported, evidenced, and communicated in early years education.

## References

- Australian Children's Education and Care Quality Authority (ACECQA). (2017). *Guide to the National Quality Standard*. Available URL: [www.acecqa.gov.au](http://www.acecqa.gov.au)
- Australian Children's Education and Care Quality Authority (ACECQA). (n.d.). *Guidelines for documenting children's learning*. Available URL: <https://www.acecqa.gov.au/sites/default/files/2018-01/GuidelinesForDocumentingChildrensLearning%20.pdf>
- Bagnato, S. J., Neisworth, J. T., & Pretti-Frontczak, K. (2014). *LINKing authentic assessment and early childhood intervention: Best measures for best practices*. Paul Brookes Publishing.
- Barassi, V. (2020). *Child, data, citizen: How tech companies are profiling us from before birth*. MIT Press.
- Carr, M. (2001). *Assessment in early childhood settings: Learning stories*. Paul Chapman.

- Carr, M., May, H., Podmore, V. N., Cubey, P., Hatherly, A., & Macartney, B. (2000). *Learning and teaching stories: Action research on evaluation in early childhood*. New Zealand Council for Educational Research.
- Carr, M., Lee, W., Ramsey, K., Parkinson, K., Priebs, N., & Brown, V. (2019). *Te Whāriki*, possibility thinking and learning stories: Tracking the progress. In A. Gunn, & J. Nuttall (Eds). *Weaving Te Whāriki : Aotearoa New Zealand's early childhood curriculum document in theory and practice* (3rd ed.). NZCER Press.
- Department of Education and Training. (2009). *Belonging, being & becoming—The early years learning framework for Australia*. Available URL: <https://www.dese.gov.au/national-quality-framework-early-childhood-education-and-care/resources/belonging-being-becoming-early-years-learning-framework-australia>
- Dockett, S., & Perry, B. (2016). Imagining children's strengths as they start school. In W. Parnell, & J. M. Iorio (Eds.), *Disrupting early childhood education research* (pp. 139–153). Routledge.
- Dunphy, E. (2010). Assessing early learning through formative assessment: Key issues and considerations. *Irish Educational Studies*, 29(1), 41–56.
- Fleer, M. (2010). *Early learning and development: Cultural-historical concepts in play*. Cambridge University Press.
- Gerber, M., Greenwald, D., & Weaver, J. (2013). *The RIE manual for parents and professionals* (2nd ed.). Resources for Infant Educators (RIE). ISBN 9781892560087.
- Harrison, L. J., Bull, R., Wong, S., Elwick, S., Davis, B., Kosourikhina, V., Spalding, N., Yeung, S., Cooke, M., & Luck, M. (2019). *NSE preschool assessment study: Review of formative assessment practices in early childhood settings*. Centre for Educational Statistics and Evaluation/The Early Childhood Education Directorate/NSW Department of Education.
- Higgins, A., & Cherrington, S. (2017). What's the story? Exploring parent–teacher communication through ePortfolios. *Australasian Journal of Early Childhood* 42(4):13–21. <https://doi.org/10.23965/AJEC.42.4.02>
- Hooker, T. (2017). Transforming teachers' formative assessment practices through ePortfolios. *Teaching and Teacher Education*, 67, 440–453. <https://doi.org/10.1016/j.tate.2017.07.004>
- Hooker, T. (2019). Using ePortfolios in early childhood education: Recalling, reconnecting, restarting and learning. *Journal of Early Childhood Research*, 17(4), 376–391. <https://doi.org/10.1177/1476718X19875778>
- Hope, K. (2017). Photographs—A window to take a look at children. *Every Child*, 23(1), 32–33.
- Jewitt, C. (ed.) (2009). *The Routledge handbook of multimodal analysis*. Routledge.
- Kervin, L., Mantei, J., & Lipscombe, K. (2015). The intricacies of classroom- based ethnography. In *SAGE research methods* (pp. 1–25). Sage.
- Kress, G. (2010). *Multimodality: A social semiotic approach to contemporary communication*. Routledge.
- Kress, G., & van Leeuwen, T. (2006). *Reading images: The grammar of visual design* (2nd ed.). Routledge.
- Lemke, J. L. (1987). Social semiotics and science education. *The American Journal of Semiotics*, 5(2), 217–232.
- Loggenberg, E. M. (2011). *Assessment in early childhood education in New Zealand*. Master of Educational Psychology Thesis, Massey University.
- Marte Meo International. (n.d.) Retrieved from <https://www.Martemeo.com/en/home/>
- Martin, S. (1999) *Take a look: Observation and portfolio assessment in early childhood* (2nd ed.). Addison-Wesley Publishing Company.
- Niles, A.J. (2016). *Complexities of assessment: Striving to get it 'right'*. Masters of Education Thesis, University of Canterbury.
- Nilsson, S., Björkman, B., Almqvist, A., Almqvist, L., Björk-Willén, P., Donohue, D., Enskär, K., Granlund, M., Huus, K., & Hvit, S. (2015). Children's voices—Differentiating a child perspective from a child's perspective. *Developmental Neurorehabilitation*, 18(3), 162–168. <https://doi.org/10.3109/17518423.2013.801529>

- Pacini-Ketchabaw, V., & Pence, A. (2011). The postmodern curriculum: Making space for historically and politically situated understandings. *Australasian Journal of Early Childhood*, 36(1), 4–8.
- Powell, B., Cooper, G., Hoffman, K., & Marvin, R. S. (2009). The circle of security. In C. H. Zeanah Jr. (Ed.), *Handbook of infant mental health* (pp. 450–467). The Guilford Press.
- Roberts-Holmes, G. (2015). The ‘datafication’ of early years pedagogy: ‘If the teaching is good, the data should be good and if there’s bad teaching, there is bad data.’ *Journal of Education Policy*, 30(3), 302–315. <https://doi.org/10.1080/02680939.2014.924561>
- Roth, J. H., Dadds, M. R., & McAloon, J. (2004). Evaluation of the puppet interview to measure young children’s self-reports of temperament. *Behaviour Change*, 21, 37–56.
- Stratigos, T., & Fenech, M. (2021). Early childhood education and care in the app generation: Digital documentation, assessment for learning and parent communication. *Australasian Journal of Early Childhood*, 46(1), 19–31. <https://doi.org/10.1177/1836939120979062>
- van Dijk, J. (2014). Datafication, dataism and dataveillance: Big data between scientific paradigm and ideology. *Surveillance & Society*, 12(2), 197–208.
- Wanoa, L., & Johnson, M. (2019). How the learning story framework can be enhanced to provide better assessment information to support planning for children’s further learning: A critique of the reliability and formative validity of learning stories in Aotearoa New Zealand. *The New Zealand Annual Review of Education*, 24, 90–104. <https://doi.org/10.26686/nzaroe.v24i0.6333>
- White, E. J., Rooney, T., Gunn, A. C., & Nuttall, J. (2021). Understanding how early childhood educators ‘see’ learning through digitally cast eyes: Some preliminary concepts concerning the use of digital documentation platforms. *Australasian Journal of Early Childhood*, 46(1), 6–18. <https://doi.org/10.1177/1836939120979066>

**Professor Lisa Kervin’s** main research interests include: (1) children’s literacy practices, (2) how children use technology and understand digital literacies and (3) how teachers may be supported in using technology in classroom literacy experiences. She has published more than 80 journal articles and 40 book chapters and has been successful in gaining competitive internal and external research funding. She has been Chief Investigator on seven ARC Discovery grants (DP190101256, DP190101033, DP150101240, DP140100328, DP1093826, DP0984651 and DP0771675) and one Office of Learning and Teaching grant (2016–2018). Lisa directs Early Start Research at UOW.

**Professor Sue Bennett’s** area of expertise is in information and communication technologies in education. Her research investigates how people engage with technology in their everyday lives and in educational settings. She has extensive experience in the design, development and evaluation of multimedia and online instructional materials developed for both university and commercial clients.

**Cathrine Neilsen-Hewett’s** current research focusses on quality early childhood education and care (ECEC) environments, integrated service delivery and enhancing access to early childhood education and health services, particularly for those from vulnerable or disadvantaged backgrounds and those living in regional, rural or remote communities. Since joining Early Start at the University of Wollongong, she has taken a senior role in key, large-scale intervention and evaluation projects focusing on educator knowledge, practices and experience. Her contributions to early childhood at a national level have included participation in advisory committees, involvement in key longitudinal studies examining ECEC as well as involvement in the development of curriculum materials for pre-service early childhood teachers. Her research and publications in the area of early childhood development and education have made significant contribution to pre-service teacher education and policy development.

# Chapter 6

## Tools and Time for Noticing in Early Childhood Pedagogy Outdoors



Anne-Marie Morrissey, Llewellyn Wishart, Natalie Robertson, Deb Moore, and Virginia Kinnear

**Abstract** Observation has long been an integral part of early childhood teachers' professional practice, essential for the assessment that forms the basis of effective planning, teaching and evaluation. In Australia, however, this elemental practice is often diverted into a daily demand to produce digital documentation in the form of visually engaging 'snapshots' of children's activities, for family consumption (Storypark & Early Childhood Australia, 2021). Much of this time-consuming documentation (Albin-Clark, 2020) is not necessarily supportive of teachers' pedagogical practice and their capacity to notice. In this chapter, we argue for the fundamental importance of reflective 'noticing' as a basis for assessment (Mason, 2020) requiring teachers' access to both time and knowledge-based observational 'tools.' Two research stories focus on observation in outdoor spaces and provide case studies illustrating that the development of teachers' observational expertise is needed. Teachers also need time commitments and a sense of agency as a basis for more effective assessment practice.

### 6.1 Introduction

**Assess:** late Middle English: from Old French *assesser*, based on Latin *assidere* 'sit by'

---

A.-M. Morrissey · L. Wishart (✉) · N. Robertson · D. Moore · V. Kinnear  
School of Education, Deakin University, Geelong, Australia  
e-mail: [llewellyn.wishart@deakin.edu.au](mailto:llewellyn.wishart@deakin.edu.au)

A.-M. Morrissey  
e-mail: [anne-marie.morrissey@deakin.edu.au](mailto:anne-marie.morrissey@deakin.edu.au)

N. Robertson  
e-mail: [natalie.r@deakin.edu.au](mailto:natalie.r@deakin.edu.au)

D. Moore  
e-mail: [deb.moore58@bigpond.com](mailto:deb.moore58@bigpond.com)

V. Kinnear  
e-mail: [v.kinnear@deakin.edu.au](mailto:v.kinnear@deakin.edu.au)

*Lexico: Definitions from Oxford Languages*

This quote is a reminder of the origins of the word ‘assessment’ from the Latin meaning to ‘sit by.’ This chapter emphasises that noticing and time to notice enables teachers to sit by and with children as they observe what is really happening. As Green (1998) highlights the origin of the word assessment implies the teacher sits with and by the learner and that assessment is something teachers do with and for children rather than to children.

Observation has long been an important tool in early childhood education to assess and plan for children’s learning. There are established observational methods (Arthur et al., 2020), which are tools that contribute to demarcating early childhood teacher professional cultures and professional discretion from other sectors of education. Such observational methods/tools and their accompanying pedagogical documentation *inform* teacher practice and decision-making (Albin-Clark, 2020; Arthur et al., 2020, p. 304) and constitute part of the pedagogical culture of early childhood teaching that teachers’ carry as internalised models within their day-to-day practice. Observation can become a daily demand to produce digital documentation that provides a visually engaging social media-like update of children’s activities for ‘digital-native families’ consumption, via e-portfolio platforms (Northam, 2021, p. 8). Much of this time-consuming documentation is framed for administrative, communication and marketing purposes, functioning as ‘new economic objects’ (Gallagher, 2018, p. 714) and not necessarily supportive of teachers’ pedagogical practice.

This practice shift raises questions about the purposes of observation and the ‘primacy of documentation to *inform* [our emphasis] teaching practice’ (Harcourt, 2017, p. 19), with current trends conflating ‘a primacy of informing parents’ (Harcourt, 2017, p. 19) with the purpose of pedagogical documentation. In this chapter, we argue that early childhood teachers appear to have lost both the space and time for, and professional agency and ownership in relation to, engaging in intentional observational processes for pedagogical purposes, particularly assessment. In this digitised climate, ‘noticing’ has garnered increased attention as an information gathering tool that enables teachers to be deliberate and active in attending to, and mentally processing, activity in the learning environment (Mason, 2020; Moreno et al., 2021; Scheiner, 2021). Although the construct of noticing in teaching practice has varying conceptions and continues to evolve, recent literature, albeit not situated in early childhood, has highlighted the central value of noticing in teachers’ assessment and response to student learning (Chan et al., 2020). It is this connection between observation as a tool for noticing and assessment that this chapter explores.

The chapter begins with a review of the research literature on noticing followed by an examination of assessment process in early childhood, common in Australia. We then discuss the importance and unique learning opportunities afforded in the outdoor play space and why assessment outdoors is important to consider. To illustrate ways to ensure meaningful observation and noticing, two stories from research are presented that represent case studies of observation as noticing using focusing or attentional tools for assessment in outdoor early education and care settings. The first story comes



from a research study on sociodramatic play in two outdoor spaces that presented very differently in terms of physical features and teaching approaches. This story is based on data on teachers' perspectives on sociodramatic play and their practice of noticing in the specific context of their own outdoor space. The second story looks at teachers and co-educators' responses to the introduction, through professional learning, of *attentional tools* for educators to engage with when teaching, observing and being with children in outdoor learning environments.

## 6.2 Noticing: Intentionally Shifting Perceptions of What We See and How We Act

Noticing in teacher practice has a number of different conceptualisations in the literature (see, for example, Superfine et al., (2017) for a summary of key differences and similarities) and is grounded principally in the work of Mason (2002), with key developments found in, for example, the work of Jacobs et al. (2010) and Scheiner (2021). This chapter engages the value of noticing as a tool for changing practice that is found across the literature particularly in relation to outdoor playspaces in early childhood education. Mason's work on noticing emerged from mathematics teaching professional practice and has gained broader traction in education, including science education (Chan et al., 2020), although it has had less attention in prior-to-school settings and practice (Moreno et al., 2021; Parks & Wager, 2015). Contemporaneous discourse in early childhood education has shifted attention to children's rights, competency and agency (Dockett & Goff, 2013). Dockett and Goff note that this shift serves to highlight that noticing what children understand is not a neutral activity. How teachers recognise and respond to what they observe and what expectations and values they bring to those observations matters to children's learning. It is timely, therefore, to give noticing closer attention as a tool for assessment practice change in early years educational settings.

Mason describes his *Discipline of Noticing* as '...foremost a systematic method for conducting research into one's own practice' (2020, p. 231). It is, he maintains, a knowledge-based approach that enables teachers to focus on their *lived experiences* by being aware of where they move or shift their attention to and what actions they take as a result (Mason, 2002, 2011, 2017, 2020). Noticing then is an intentional act, a structured process that shifts teachers' attention to identifying and describing relevant details or features in their educational contexts (Mason, 2011). What is attended to be interpreted by identifying and reasoning about known relationships and properties, which is then used to decide and justify subsequent practical actions (Mason, 2002, 2017). From this perspective, noticing is a means of inquiring and reporting that inquiry, '...a research tool for analysis of what subjects say and do' (Mason, 2017, p. 2). As a process, noticing can support teachers to 'learn from practice' (Llinares, 2020, p. 39) through changing how and what they notice in a situation, what knowledge they use to interpret and make meaning of it, and how



prior knowledge impacts that interpretation and therefore how they act (Moreno et al., 2021). Disciplinary and theoretical knowledge is used as a semiotic tool for thinking and reasoning about practice, and teachers' beliefs, dispositions and proclivities in how what is noticed is interpreted are fore fronted (Mason, 2020). Noticing therefore requires teachers to *slow down* and examine and re-examine what could be overlooked if their actions are habitual rather than reflective, seeking to *probe beneath the surface* of what is observed or experienced (Mason, 2017).

The concept of *noticing* is not new to assessment practices in early childhood education. In fact, Australia's National Quality Standard Professional Learning Program published an e-newsletter on noticing to support teachers with the process of recognising and documenting meaningful learning (Hydon, 2013). However, given the fast-paced multiple ways of producing and recording what children are doing, teachers run the risk of losing their ability to take time, slow down and notice, and instead end up describing how children are 'passing time' (Hydon, 2013: n.p.). Noticing, when viewed as a research tool into one's own practice, provides a means for teachers to examine what they bring to their own noticing of children's activity, how they interpret what they see and the pedagogical actions they take as a result.

### 6.3 Assessment Processes in Early Childhood Education

Assessment has long been part of an early childhood teachers' work in supporting young children's learning (Pyle et al., 2020). Whilst assessment in early childhood education has been described as contested, it is widely agreed that assessment needs to be meaningful and purposeful (Danniels et al., 2020; Harrison et al., 2019). In Australia, assessment is one of five practices that early childhood teachers are expected to undertake as part of their implementation of the Early Years Learning Framework (EYLF) (Australian Government Department of Education and Training (AGDET), 2020). The EYLF describes assessment for children's learning as the 'process of gathering and analysing information as evidence about what children know, can do and understand' (AGDET, 2020, p. 19). As part of their assessment processes, teachers are directed to use a variety of strategies and approaches 'to collect rich and meaningful information that depicts children's learning in context, describes their progress and identifies their strengths, skills and understandings' (AGDET, 2020, p. 20).

Concerns have recently been raised about the time early childhood teachers have to assess children's learning and the impact a lack of time might have on assessment quality (Harrison et al., 2019; Pyle et al., 2020). Whilst DeLuca et al., (2020, p. 473) acknowledge that time presents a challenge, they also suggest teachers require supports in developing assessment literacy, in order to 'negotiate curricular aims, pedagogical approaches, and student interests.' Such support would assist teachers' to view assessment as an everyday practice that can be undertaken with children (DeLuca et al., 2020).

Concerns about teachers' assessment literacy have been further identified in other studies, suggesting teachers lack confidence and knowledge in analysing children's learning (Danniels et al., 2020; Pyle & DeLuca, 2017). In Australia, the E4Kids study (Tayler, 2016) identified instructional support to be the lowest performing quality indicator of teachers' practice. Because teaching practices are shaped by assessment, this finding suggests teachers may face challenges documenting and analysing learning (Pyle et al., 2020). Identifying such challenges has resulted in researchers calling for more guidelines to support teachers to gather and analyse rich and meaningful assessment (Harrison et al., 2019; Pyle et al., 2020).

Of concern is that in the introduction of digital documentation, early childhood teachers have been encouraged to 'provide shared shorter snapshots of learning more often' (Storypark & Early Childhood Australia, 2021: n.p.). There has been limited research that has examined the quality of documentation that provides *shorter snapshots* of learning. However, in a context where teachers may already be struggling with the pace and rigour of assessment practices, this emphasis on *shorter snapshots* may be of further detriment to the in-depth systematic assessment of children's learning. As is apparent in the next section, when reviewing literature with respect to assessment in early childhood education is that it is rare to find any reference to assessment in outdoor playspaces.

## 6.4 Teachers or Safety Supervisors in Outdoor Playspaces?

Outdoor play and the places where it occurs is important to children (Gill, 2014; Moore et al., 2019; Waller et al., 2017); with researchers finding that outdoor playspaces in early childhood settings may provide 'greater opportunities for sustained shared thinking than inside classrooms...and also unique and unexpected occasions for authentic learning' (Waller, 2011, p. 39). However, in contrast with these findings, other researchers have found that early childhood teachers' provision of outdoor playspaces, resources and opportunities vary according to their beliefs, values and understandings on the core purpose of outdoor play (Leggett & Newman, 2017). For example, some early childhood teachers have been found to consider *outdoor time* purely as a time for children to 'release energy so they can focus when they return indoors,' which in turn, 'reaffirms the idea that intentional learning opportunities [only] take place indoors' (Leggett & Newman, 2017, p. 29). In this respect, noticing serves to support teachers to see that their observation of and response to events is directly impacted by how their beliefs, dispositions and knowledge frame the teaching situation they are attending to (Mason, 2020; Moreno et al., 2021; Scheiner, 2021). Similarly, researchers have found there is tension between the notion of *free play* in outdoor playspaces and that of intentional teaching, with many teachers believing that planning is not necessary for outdoor learning (Hunter et al., 2020). Further to this, researchers (Hunter et al., 2020; McClintic & Petty, 2015) have found that teachers perceive outdoor play as a 'time for teachers to take a break and solely ensure that children are safely supervised' (Hunter et al., 2020, p.35).

Despite compelling evidence on the value of the outdoors as a learning space (cf: Little et al. 2017; Waller et al., 2017) McClintic and Petty (2015) highlight misunderstandings on the value of outdoor play and how to incorporate this into pedagogical planning, teaching and assessment. As a consequence, outdoor playspaces are frequently not prioritised as places for learning, with a tendency for teachers to ‘describe their role as primarily facilitators of safety’ (Hunter, et al., 2020, p. 39).

It is not surprising that supervision has increasingly become a priority for early childhood teachers when a focus on supervision holds a dominant position in early childhood education through the Australian National Quality Standards (NQS) (ACECQA, 2013). For example, in Standard 2.3.1., whereby ‘each child is to be adequately supervised at all times’; and it is clearly stated that it is a legal ‘offence to inadequately supervise children.’ Given this policy context, it is easy to see why teachers are more concerned about their supervisory role compared with the pedagogical documentation of children’s learning in outside playspaces (Leggett & Newman, 2017) and how attention to safety can shift attention to what they see, how they interpret it and how they act as a result. On the other hand, noticing can support teachers to become attuned to see what children as learners may be attending to in their outdoor play.

In the following sections of this chapter, we will present two stories from research undertaken in outdoor early childhood environments. Each story, connected to different studies, will unpack the notion of noticing in the outdoors and present tools to support teachers in their practices. The first story ‘Focusing tools for sociodramatic play,’ presents new findings from a previously published study that examined and compared the complexity and sophistication of children’s play processes in two very different outdoor playspaces (Robertson et al., 2020). In this chapter, we present the perspectives of teachers in the two playspaces towards children’s sociodramatic play and analyse these from a lens of noticing and introducing focusing tools. The second research story, ‘Using attentional tools in physically active outdoor play pedagogy’ introduces the concept of *attentional tools* for noticing children’s learning through movement and physically active play in outdoor playspaces (Wishart, 2019). The discussion of findings uses a lens of noticing to analyse teachers’ experiences learning and implementing a tool for the assessment of children’s physical play.

## **6.5 Stories from Research: Noticing and Focusing Tools for Sociodramatic Play**

Sociodramatic play is a significant activity in the preschool years, and increasingly complex and sophisticated sociodramatic play provides a context supportive of a range of developing skills including higher order thinking, social and language skills (Karpov, 2014; Stagnitti et al., 2020). Outdoor playspaces are important sites for children’s sociodramatic play within early childhood programmes, offering more time, space and resources than indoors for children to develop their play. There is

wide agreement among researchers that both the activities of teachers (Hunter et al., 2020), and the characteristics of outdoor playspaces (Carr & Luken, 2014; Cloward Drown and Christensen 2014; Morrissey et al., 2017), can be important influences on the frequency, complexity and sophistication of children's sociodramatic play. However, as noted above teachers are often uncertain about their pedagogical roles in outdoor playspaces and often focus on supervision as their primary activity (Hunter et al., 2020; Leggett & Newman, 2017; McClintic & Petty, 2015).

To explore the role of teacher noticing and assessment in the context of outdoor playspaces, we draw upon a study involving comparison of children's sociodramatic play in two preschools, focusing on 4–5-year-olds in the year before school (Moore et al., 2019; Robertson et al., 2020). We present previously unpublished findings from teacher interviews and discuss these with regard to their contrasting beliefs, approaches and noticing.

As researchers, we were privileged with ample time and tools to *notice* and investigate our questions, unhindered by the everyday demands of a teacher's work in a busy early education and care setting. This in and of itself illustrates the value that examination and re-examination of observations bring to the process of noticing, when noticing is used as a tool for learning from practice (Linares, 2020) and highlights the importance of time for reflection for teachers. Our observations included the effects of the features and affordances of the spaces on the frequency and complexity of children's sociodramatic play, as well as gathering children's and teachers' perspectives on and understandings of their playspaces (Robertson et al., 2020) and emotional well-being (Moore et al., 2019). The tool used to assess the frequency and level of sociodramatic play observed was *The Smilansky Scale for Dramatic and Socio-Dramatic Play* (SSEDSP) (Smilansky & Sheftaya, 1990) which uses time sampling to identify the processes essential to the enactment of sophisticated play. These processes include role play; make believe with objects (object substitutions); make believe with actions and situations (storyline development); persistence in role play; interaction with others, and two forms of verbal communication: pretend and metacommunication.

Teachers were interviewed for their perspectives on children's sociodramatic play in their outdoor playspaces. The interviews included set questions, as well as opportunities to follow-up on issues that arose during the discussion. There was a focus on teacher's perceptions of children's use of the outdoor playspaces and the learning and development they noticed happening there. The teachers were also asked about how they used the outdoor playspaces in their planning and teaching, and features of the spaces they particularly liked, and any they found challenging. At Centre 1, there were two teachers (Teacher One and Teacher Two) who were interviewed separately. Centre 2 comprised of one teacher (Teacher Three) and a co-educator, who both requested to participate in the interview together. Teacher Three had discussed the interview questions beforehand with colleagues, documenting the team perspective with lengthy notes that she talked to during the interview.

The outdoor playspaces at the two centres presented very differently, and the study's findings showed different outcomes in children's sociodramatic play and experiences. Researcher field notes described Centre 1 as crowded and noisy, with

music blaring so loudly the children had difficulty being heard, with constant, frenetic running by the children. Teachers in this context supervised children's play, rarely becoming involved in their experiences. Researcher impressions were that teachers at Centre 1 appeared hurried and stressed, and in interviews, teachers described some tensions in their work together. The narrow outdoor space, overcrowding, lack of quiet spaces and low-quality resources appeared to hinder children's sociodramatic play (Moore, et al., 2019; Robertson, et al., 2020), which was both infrequent and low-level as measured by the SSEDSP.

In contrast, the outdoor playspace in Centre 2 was expansive and naturalised, affording plentiful vegetation, small hidden spaces, loose parts, interspersed with some traditional play equipment. Children's sociodramatic play here was frequent, complex and sophisticated. Teachers in Centre 2 were observed to be regularly engaged with children in their play experiences. They also presented as calm, collaborating in a specific planning focus on outdoor play, including long-term planning goals to support the development of children's sociodramatic play skills over the preschool year. They identified their professional satisfaction with the development of the children's play as an outcome of their long-term focus and planning.

When asked about their impressions of how children used the outdoor playspaces, the responses varied markedly between centres. For example, when prompted to describe how children used the outdoor playspace, Teacher One at Centre 1 described children's gross motor activity. Teacher One did not mention sociodramatic play, while Teacher Two perceived the following examples as evidence of 'imaginative play' happening in the outdoor playspace:

I think they are mostly engaged in imaginative play, outside they see that as an area outside in which they can express themselves, they have the most freedom.... it is a part of their imaginative play that running.

...if you stand back and I guess watch when they are riding their bikes, there is lots of imaginative play and going on there as well. Especially the two-seater bike, you see them stopping picking up people and dropping people off.

Teacher Two's noticing of sociodramatic play in the outdoor playspace appears to be based on a conception of children being free to 'imagine,' and on impressionistic and surface interpretations of what was happening in the children's play. While Teacher Two did talk of children's imaginative play, there was no articulated noticing of children engaging in specific processes involved in sociodramatic play. Also absent was evidence of knowledge-based interpretation or reflection as a basis for assessment of the play to inform planning. Both Teacher One and Teacher Two appeared unaware of the markedly infrequent and low-level nature of the sociodramatic play happening in their outdoor playspace, as identified by the researchers.

The teachers at Centre 1 also described tensions, a lack of collaboration and absence of a sense of common purpose in the planning for the outdoor playspace. There was no sense of common foci or teaching goals to provide a shared framework for noticing of the play, including sociodramatic play:

I find planning for that outdoor area with so many different staff wanting to use it and we have different things going everywhere across the whole area it's quite hard to plan things... (Teacher One).

So, we are here on a Monday and Wednesday, but by the time you come back on a Monday, everything has changed, or if you put out something particularly so, if you wanted to put out a craft activity or something, none of the pieces would be there when you got back. I find that really challenging to set up the outside environment for that intentional teaching, other than the physical development side. (Teacher Two).

The interview with Teacher Three from Centre 2 provided a starkly contrasting picture of noticing of sociodramatic play in the outdoor space, with consequent interpretation and reflection as bases for assessment and planning. Specifically, the teachers at Centre 2 saw children's sociodramatic play as a major activity in their centre's outdoor playspace. Teacher Three's responses were reflective of the teaching team's long-term purposive planning to support children's sociodramatic play skills over the length of the preschool year. They also demonstrated awareness of the specific processes involved in sociodramatic play, which enabled them to assess and evaluate the development of children's play skills over time. For example, when asked her impressions of how children used the outdoor playspace, Teacher Three replied:

Well, it varies depending on the time of year and the children's skill levels, so for example at the start of the year we find children are far more solitary as they get empowered with skills for socialization for play, the play changes throughout the year. So what the children need to learn skills to enter and exit the play, skills to evolve and include others in their play skills to collaborate respectfully and fairly. Skills to be exposed to a diverse range of natural items and loose parts and know that they are free to use them in their play. For example, logs branches, cones, tea sets, balls, ropes, material and animals, and other props that they can readily make themselves that they can add to their play.

Teacher Three continued to describe the long-term approach to planning in supporting children's sociodramatic play, based on noticing and assessing children's progressions in their play over time:

...at the beginning of the year until the children have developed some basic play and socialization skills we tend to limit the play to the regular kinder yard and we provide far more resources and engage ourselves constantly in the play so that we are modelling the skills and supporting the children's emerging skills. As the children's skills develop we venture then into the bigger yard, at first with props and resources and then by Term 3, we find children tend to self-select resources... they resource their own play as required.

Through your observations you would have seen the children have long periods of uninterrupted play. I mean we might go over and model and support if we see something going on or suggest something else, but we are not directing their play, it is their play... children need to develop social and emotional skills, resilience and play skills to engage in high end collaborative, creative play.

Teacher Three's interview responses showed that the teaching team at Centre 2 made time for noticing and assessing children's sociodramatic play, both in the sense of long-term assessment of and planning for children's sociodramatic play and in having opportunities to spend time as a team in collaborative reflection and planning. They also had the necessary 'tools': the knowledge and understanding of the integral processes and skills involved in sociodramatic play, that enabled them to effectively interpret and assess children's play for forward planning. While the earlier analysis

from this study (Robertson et al., 2020) identified the physical features of the different playspaces as important influences on the quality of children's sociodramatic play, the interview data suggests that teachers' knowledge and understanding of sociodramatic play also played a significant role in the sophisticated play of children in Centre 2. In the interview, Teacher Three emphasised the importance of planning and teaching:

...our whole outdoor environment has been planned and developed over a number of years to be able to allow children to succeed and support their development.

The different qualities of noticing of the teachers in Centre 1 and Centre 2 reflected the researchers' own perceptions of the two centres: Centre 1 with its sense of rushing, pressure and stress, compounded by an unsupportive environmental setup; and Centre 2 with its sense of calm, purpose and agency in a favourable environment. The teachers in Centre 1 appeared to be working in a context organised in a way that limited their capacity to take time and use tools for effectively noticing the incidence and quality of sociodramatic play happening in their centre.

The research story presented here supports other research that has demonstrated the importance of noticing sociodramatic play in early childhood settings (Robertson et al., 2018; Stagnitti et al., 2020). For example, in Robertson et al.'s (2020) study, children's sociodramatic play was most complex in early childhood services where teachers were able to notice and respond to the needs of the play because they were well attuned to play processes. Furthermore, Stagnitti et al. (2020) illustrated a significant increase in children's oral language skills when teachers dedicated time to the noticing, assessment and response to the complexity of children's sociodramatic play. What these studies collectively highlight is that in order to support the complexity and sophistication of children's sociodramatic play, teachers need to be able to notice and assess important play processes. Here, this research story highlights that noticing and assessing sociodramatic play processes needs consideration in outdoor playspaces.

The use of effective, practical and adaptable tools for noticing can provide focused lenses for probing beneath the surface of what is observed, and so informing users of the important elements to look for (Morrissey, et al., 2020). An acknowledgement of the pedagogical value of such focusing tools as an aid to noticing, and the decision to use them, can also provide a rationale for taking time and creating opportunities for seeing and evaluating what is happening (Harrison et al., 2019).

An example of such focusing tools that enables the noticing and assessment of sociodramatic play is provided in Appendices 6.1 and 6.2. Appendix 6.1 provides a checklist of reflective questions to guide teachers to notice and assess (DET & Deakin University, 2021). For example, do the children communicate their ideas with peers and adults? Do children engage in different types of play? Once teachers have become more aware of how to notice the processes involved in children's sociodramatic play they can use a more structured tool, such as Appendix 6.2. Grounded in research of sociodramatic play (Fleer, 2021; Smilansky & Shefatya, 1990; Stagnitti & Cooper, 2009), the focusing tools provide teachers with guidance to notice and assess the complexity and sophistication of important play processes. The focusing tools not only help teachers to notice and assess children's sociodramatic play, but also to

evaluate the effectiveness of their practice (Arthur et al., 2020). Whilst the tools are focused on sociodramatic play, they could be adapted to enhance noticing for a range of activities, learning experiences and practices.

## 6.6 Stories from Research: Using Attentional Tools in Physically Active Outdoor Play Pedagogy

In this section, the use of tools for noticing children's learning through movement and physically active play in outdoor playspaces is explored. Tools can be distinguished by their direction of focus inward and outward. An outward focused *observational tool* familiar to the lexicon of early childhood teachers would be time sampling (Arthur et al., 2020) or time-sampled behaviour mapping used by early childhood education researchers investigating active outdoor play (Wishart et al., 2019). Hence, looking *out* systematically at children's movement and physically active play preferences for example, whereas what is proposed here is the use of *attentional tools* that are foremost interior-focused and attentional, affording teachers the opportunity to look inwards at their own whole-bodied sensory experience of outdoor playspaces (Scheiner, 2021) to notice children's learning outdoors in a nuanced way through a more multi-sensory, embodied ecological lens. What is proposed here can be a part of a holistic approach to planning for outdoors that involves looking through multiple lenses, recognising the importance of children's and adults' subjective experience in an outdoor playspace (Morrissey et al., 2020). Morrissey et al. (2020) proposed that evidence of what is noticed in outdoor environments can be gathered by what is 'felt and experienced' (Heikkinen, 2010, p. 274) by both children and teachers through a variety of strategies. Such subjective practices may need more time, pedagogical attention and supportive professional learning for teachers to have an impact. As noted, Wishart and Rouse's (2019) outdoor pedagogy research suggested early childhood teachers and co-educators could observe and experience children's physically active outdoor play differently when familiar ways of knowing and tacit perceptions about outdoor learning environments and children's physically active play were reappraised after professional learning. The researchers concluded that:

early childhood educators need time, space and immersive experience coupled with extended, focused professional learning (Copeland et al., 2012) to modify understandings, appraise values and redefine their role in effective provision of outdoor play experiences (Wishart & Rouse, 2019, p. 2295).

Moreover, it is noted again that longitudinal professional learning approaches have been identified as having higher impact upon practice (Egert et al., 2018; Siraj et al., 2018 cited in Wishart, 2019). Embracing a longitudinal approach to support new professional learning, reinforces the notion of taking time to allow perception shifts to organically emerge. In this case, the professional learning (Wishart, 2019; Wishart & Rouse, 2019) focused on introducing several new *attentional tools* to a group of early childhood teachers and co-educators to engage with when teaching,



observing and being with children in outdoor learning environments. Among these were:

- Engaging with a *sensing-feeling-action cycle* (Bainbridge Cohen, 2012; Wishart, 2019)
- Expanding *relationship awareness* (Wishart, 2019)

These two *attentional tools* were adapted from Body-Mind Centering® a body-oriented experiential education and therapeutic methodology (Body-Mind Centering Association (BMCA) 2021; Wright Miller et al., 2010). This methodology has been used in early childhood teaching, movement, dance, somatic and environmental education with young children and adults in continuing education, professional learning and tertiary education contexts (Wishart, 2010, 2011, 2019; Wishart & Clarke Lapin, 2001). The term *somatic* means pertaining to the body, experienced and regulated from within (ISMETA n.d. cited in Lester, 2017, p.31).

Body-Mind Centering® was introduced to the group of early childhood teachers and co-educators mentioned previously as participants in outdoor pedagogy research within a professional (experiential) learning context (Wishart, 2019; Wishart & Rouse, 2019). This application of Body-Mind Centering® was introduced to these research participants as ‘body–mind integration approaches to teaching and learning outdoors with natural elements and built features’ (Wishart, 2019:139). These approaches formed a suite of *attentional tools* that were engaged with experientially by the researcher and participants (in situ) within several early childhood outdoor playspaces. These outdoor playspaces served as sites for four professional learning sessions over the five-month period of research (Wishart, 2019; Wishart & Rouse, 2019). The *attentional tools* were provocations to:

- open the senses—touch, vestibular, proprioception, sight, sound, smell, texture and tactility;
- come into an activated relationship with all senses and whole body when observing and moving in and through outdoor playspaces to build *relationship awareness* and kinaesthetic awareness and empathy (Eddy & Moradian, 2020) within oneself as an adult and, in turn attending outwards to children’s multi-sensory and movement experiences in the outdoors.

The *attentional tools* that were engaged with are described in more detail in Tables 6.1 and 6.2.

These *attentional tools* were introduced as conceptual provocations through discussion and conversation about their meaning. Participants engaged in guided mindful explorations of the playspaces with gentle opening and activation of all the senses; attending to feelings about being in the playspaces, finding places that attracted one’s attention and interest and then actively moving in, through and across the spaces in playful ways. In subsequent post-professional learning reflections, the researcher and participants (pseudonyms used) highlighted their own distinct shifts in noticing arising from these experiential explorations, for example:

**Table 6.1** Sensing–feeling–action cycle

Form of noticing activity	Elaboration/Questions
<i>Sensing</i>	Opening all our senses to the surrounding world: taste, touch, smell, hear, see, movement, gravity, weight. Allowing the surrounding world to <i>touch</i> us
<i>Feeling</i>	How do you act and respond to an outdoor space, movement, physical activity, manipulative play, touch. In turn how do surroundings and elements of a space natural and built touch us?
<i>Action</i>	How do you act and respond to an outdoor space, movement, physical activity, manipulative play, touch. In turn how do surroundings and elements of a space natural and built touch us?

**Table 6.2** Relationship awareness

Form of noticing activity	Elaboration/Questions
<i>Relationship awareness</i>	Expanding our awareness of with whom and with what children (and adults) can potentially engage in movement, play, physical activity and exploration in outdoor spaces. Plants, shrubs, trees, earth, loose parts, terrain, furniture, built elements, sky, water, animals, people and more

- Researcher Being more aware that children have opportunities to develop ‘a kinaesthetic relationship with the outdoor terrain and landscape’ (Wishart, 2019, p. 132–133).
- Denise Appreciating how much sensory input children are getting when they are playing outside.
- Anika Oh, making us aware of...I suppose using our senses more and getting the children to explore that ... in the surroundings.
- Siobhan Yes, yes, though not just using your eyes but also using touch so not just your fingers but through your feet.
- Denise I focus more now on the terrain and the different levels and things. It’s something I took for granted but now I’m seeing okay they are jumping from one level to another or their leaping and balancing from one thing to another. Or they’re hanging from things, it’s opened my eyes a lot more to the...using all that natural stuff...
- Anika And the senses too...
- (Wishart, 2019; Wishart & Rouse, 2019, p. 8).

## 6.7 Seeing Beyond the Familiar Through Seeing Differently

When you know what you are doing then you can do what you want (Moshe Feldenkrais)

The educators in this research story began to see outdoor pedagogy differently when they were given the opportunity to slow down and attend mindfully to their felt experience and perceptions of familiar outdoor play spaces. Feldenkrais's (as cited in Ruecker 2020) aphorism suggests we build more agency and choice when we attend to and become aware of our actions or practices. In the context of children's learning through physically active play and movement in outdoor playspaces more pedagogical agency and choice may be available to teachers by reframing Feldenkrais's aphorism to 'you can only know what you are seeing differently, when you are offered ways to attend differently to what is familiar.' In this research story, as noted by Wishart and Rouse (2019), educators altered perceptions of outdoor pedagogy resulted in seeing the physical nature of children's active play, sensory and movement development differently supported by natural features and terrain at hand. As Mason (2002, p. 38) suggests observations of children's learning can become theory-laden, we can only see aspects which we are already predisposed or primed to see. Wishart and Rouse's (2019) research found that participants could observe and experience differently when familiar ways of knowing and tacit perceptions about outdoor learning were reappraised after professional learning and engagement with *attentional tools*.

The professional learning reflected upon here focused more deeply on specific ways of seeing children's physical activity, sensory-based learning and development in relation to build and naturalized elements and terrain in an outdoor playspace. The use of *attentional tools* which afforded noticing through an immersive multi-sensory, embodied ecological lens (Scheiner, 2021) potentially challenge conventional schemas of observation and perception of how children move and play in outdoor playspaces (Wishart, 2018). By having different tools to observe children's movement and active play affords the collection of more nuanced evidence of multi-sensory learning in, through and about movement in outdoor playspaces.

## **6.8 Implications for Assessment Practice: Slowing Down to 'Sit Beside' and Take Time to Notice**

The two stories of research presented here show that time for individual and collaborative noticing and reflection support in-depth assessment as a basis for long-term planning and effective teaching in outdoor spaces. By taking time to notice, teachers were more able to endow meaning to and improving learning experiences for both children and teachers. Whilst time has been a hindrance to effective assessment (Harrison et al., 2019; Pyle et al., 2020), the findings presenting in the two research stories shows that noticing, as a form of assessment can occur alongside teachers' pedagogical interactions with children. However, in order to deeply notice, teachers need to have established a collective approach and vision for what they want to achieve in their teaching and children's learning. This finding supports DeLuca et al.'s (2020) argument that time for assessment is something that can occur alongside their

teaching, where they can slow down and ‘sit beside’ the children. Adding to this argument, the findings of the research stories presented in this chapter also suggests that teacher agency and collaborative practice are important elements in effective noticing and assessment. When teachers were able to work together to act on their informed noticing and implement the necessary actions to achieve their goals, assessment and subsequent planning were strengthened and purposeful.

The stories also show that teachers need pedagogical ‘tools’ for effective noticing and assessment. These tools can be in the form of existing knowledge, relevant professional learning or applicable guides for assessment practice. Where teachers are not given time for noticing or had a lack relevant tools, their noticing was likely to be superficial and ineffective as a basis for their pedagogical planning. Research has recommended teachers be provided with more assessment guidance in order to support them to gather and analyse rich and meaningful assessment (Harrison et al., 2019). The research stories presented in this chapter supports these recommendations, as tools in the form of structured observation; time and pedagogical knowledge were found to support more meaningful noticing. Accordingly, this chapter provides teachers with tools that can support them to notice and assess children’s learning. With the proliferation of assessment occurring through digital documentation (Hooker, 2019; Storypark & Early Childhood Australia), future research should examine how teachers are provided with tools to notice and assess in this online environment. Finally, these research stories further highlight the outdoor playspaces as important sites for noticing and assessment of children’s learning. When teachers put value on the teaching and learning that occurs in the outdoors, they can better support children’s learning and also their own teaching practice and knowledge.

## Appendix 6.1

# Teacher Checklist

## Questions to prompt reflective observations

- Playing collaboratively**
  - Do the students initiate their own play on their own and with others?
  - Can they maintain play?
  - Do they have the skills to join in with others?
  - Do they communicate their play ideas with peers and adults?
  
- Creativity & imagination**
  - Can they use open-ended materials in an imaginative way?
  - Do they engage in different types of play?
  - Do they have particular play interests?
  
- Challenge, resilience & individual engagement**
  - Do they respond positively to teacher involvement?
  - Do they respond positively to additional challenges?
  - Are they inclusive of others in their play?
  - Are they able to resolve issues and respond to challenges in their play and interactions with others?

## Appendix 6.2

# Reflective Observation

## Questions for Noticing

	What is happening in the play?	Where is the play happening?
How are children using objects?		
How are children role-playing?		
How are children sequencing stories?		
How long has the play lasted?		
How are children collaborating with others to plan and organise play		
How are children resolving conflicts around play		
Who is engaging in sociodramatic play processes, and with whom?		
What concepts are children exploring their play? How does this link to other experiences?		
What is my involvement as a teacher?		
What planning is involved in this process?		



# Reflective Observation

## Prompts for Noticing

Use of objects	<p><b>How are children using objects in their play?</b></p> <ul style="list-style-type: none"> <li>• Manipulating or exploring objects with no pretend context</li> <li>• Using objects in their real life purpose in a pretend context</li> <li>• Changing the meaning of object/s to be something else</li> <li>• Using gestures or words replace the use of objects</li> <li>• There is no use or reference to objects</li> </ul>
Role playing	<p><b>How are children role-playing?</b></p> <ul style="list-style-type: none"> <li>• Verbally identifying their role</li> <li>• Verbally identifying their role and acting out between 1 -3 actions associated with the role</li> <li>• Assuming the symbolic characteristics of the role (e.g., voice, language, posture, behaviour)</li> </ul>
Sequencing of storyline	<p><b>How are children sequencing stories?</b></p> <ul style="list-style-type: none"> <li>• Acting out one action associated with their role</li> <li>• Acting out a short sequence of actions associated with their role (up to three actions)</li> <li>• There is a logical beginning, middle and end of the storyline</li> <li>• The storyline is complex and includes variety of problems, situations and scenarios</li> </ul>
Persistence in play	<p><b>How long has the play lasted?</b></p> <ul style="list-style-type: none"> <li>• Less than 5 minutes</li> <li>• Up to 15 minutes</li> <li>• Up to 30 minutes</li> <li>• Up to 60 minutes</li> <li>• One or more days</li> </ul>
Collaborating with others to plan and organise play	<p><b>How are children collaborating with others to plan and organise play</b></p> <ul style="list-style-type: none"> <li>• Identify roles and scenarios</li> <li>• Organise spaces and materials</li> <li>• Resolve problems and challenges</li> <li>• Research planned scenarios</li> <li>• Create resources for play</li> <li>• Communicate to maintain roles and scenarios</li> <li>• Use meta-communication to maintain roles and scenarios from inside and outside the play</li> </ul>



## References

- Albin-Clark, J. (2020). What is documentation doing? Early childhood education teachers shifting from and between the meanings and actions of documentation practices. *Contemporary Issues in Early Childhood*, 22(2), 40–155. <https://doi.org/10.1177/1463949120917157>
- Arthur, L., Beecher, B., Death, E., Dockett, S., & Farmer, S. (2020). *Programming and planning in early childhood settings* (8th ed.). Cengage Learning.
- Australian Children’s Education and Care Quality Authority (ACECQA). (2013). *Guide to the National Quality Standard*. ACECQA.
- Australian Government Department of Education and Training (2020). *Belonging, being and becoming: The early years learning framework for Australia*. Council of Australian Governments.
- Bainbridge-Cohen, B. (2012). *Sensing, feeling, and action: The experiential anatomy of Body-Mind Centering®* (3rd ed.). Contact Editions.
- Body-Mind Centering® Association [BMCA] (2021). *What is BMC?* <https://bmcassociation.org/about/bmc>
- Carr, V., & Luken, E. (2014). Playscapes: A pedagogical paradigm for play and learning. *International Journal of Play*, 3(1), 69–83. <https://doi.org/10.1080/21594937.2013.871965>
- Chan, K., Xu, L., Cooper, R., Berry, A., & van Driel, J. (2020). Teacher noticing in science education: Do you see what I see? *Studies in Science Education*, 57(1), 1–44. <https://doi.org/10.1080/03057267.2020.1755803>
- Cloward Drown, K. K., & Christensen, K. M. (2014). Dramatic play affordances of natural and manufactured outdoor settings for preschool-aged children. *Children, Youth and Environments* 24(2), 53–77. <https://www.jstor.org/stable/10.7721/chilyoutenvi.24.2.0053>
- Danniels, E., Pyle, A., & DeLuca, C. (2020). The role of technology in supporting classroom assessment in play-based kindergarten. *Teaching and Teacher Education*, 88, 102966.
- DeLuca, C., Pyle, A., Valiquette, A., & LaPointe-McEwan, D. (2020). New directions for kindergarten education: Embedding assessment in play-based learning. *The Elementary School Journal*, 120(3), 455–479.
- Department of Education and Training (DET) & Deakin University. (2021). *Professional learning program: Differentiated/play-based inquiry learning in the early years of schooling*. <https://www.education.vic.gov.au/school/teachers/profdev/Pages/Deakin-Professional-Learning-Program.aspx>
- Dockett, S., & Goff, W. (2013). *Noticing young children’s mathematical strengths* [Paper presentation]. In V Steinle, L Ball and C Bardini (Eds.), *Mathematics education: Yesterday, today and tomorrow. 36th annual conference of the Mathematics Education Research Group of Australasia, Melbourne, Victoria* (pp. 771–774). MERGA.
- Eddy, M.H. & Moradian, A.L. (2020). Childhood nature in motion: The ground for learning. In E. Barratt-Hacking, A. Cutter-Mackenzie, & K. Malone (Eds.), *Research handbook on childhood nature: Assemblages of childhood and nature research* (1st ed., pp. 1791–1814). Springer International Publishing.
- Ruecker, B. (2020). *Quotes by Moshe Feldenkrais*. Moving Experience. <https://www.movingexperience.eu/quotes-by-moshe-feldenkrais/>
- Fleer, M. (2021). *Play in the early years*. Cambridge University Press.
- Gallagher, A. (2018). The business of care: Marketization and the new geographies of care. *Progress in Human Geography*, 42(5), 706–722. <https://doi.org/10.1177/0309132517702970>
- Gill, T. (2014). The benefits of children’s engagement with nature: A systematic literature review. *Children, Youth and Environments*, 24(2), 10–34.
- Green, J. M. (1998). Constructing the way forward for all students: What are the essential determinants of a useful assessment system which can contribute to improve teaching and learning? *Education Canada*, 38(3), 8–12.
- Harcourt, D. (2017). I am interested in the primacy of documentation to inform teaching practice... [Comment on the blog post “The changing preferences of parents and why leaders of the



- largest ECE groups are making the same decision”]. *LinkedIn*. <https://www.linkedin.com/pulse/changing-preferences-parents-why-leaders-largest-ece-groups-dixon>
- Harrison, L., Bull, R., Wong, S., & Elwick, S. (2019). *NSW preschool assessment study: Review of formative assessment practices in early childhood settings (Report No. DOC 19/623423)*. Academy of Continuing Professional Development in Education, Macquarie University. [https://researchmanagement.mq.edu.au/ws/portalfiles/portal/123841104/Publisher\\_version.pdf](https://researchmanagement.mq.edu.au/ws/portalfiles/portal/123841104/Publisher_version.pdf)
- Heikkinen, K. (2010). Integral mind, brain and education. In S. Esbjörn-Hargens, J. Reams, & O. Gunnlaugson (Eds.), *Integral education: New directions for higher learning* (pp. 271–288). Suny.
- Hooker, T. (2019). Using ePortfolios in early childhood education: Recalling, reconnecting, restarting and learning. *Journal of Early Childhood Research*, 17(4), 376–391.
- Hunter, J., Synersen, K. B., Graves, C., & Bodensteiner, A. (2020). Balancing outdoor learning and play: Adult perspectives of teacher roles and practice in an outdoor classroom. *International Journal Early Childhood Environmental Education*, 7(2), 34–50.
- Hydon, C. (2013). Noticing and recording learning. *National Quality Standard Professional Learning Program*. <https://www.acecqa.gov.au/sites/default/files/2020-12/NoticingAndRecordingLearning.pdf>
- Jacobs, V., Lamb, L., & Phillip, R. (2010). Professional noticing of children’s mathematical thinking. *Journal for Research on Mathematics Education*, 41(2), 169–202.
- Karpov, Y. V. (2014). *Vygotsky for educators*. Cambridge University Press.
- Leggett, N., & Newman, L. (2017). Play: Challenging educators’ beliefs about play in the indoor and outdoor environment. *Australasian Journal of Early Childhood*, 42(1), 24–32.
- Lester, K. F. (2017). Somatics: A buzzword defined. *Journal of Dance Education*, 17(1), 31–33. <https://doi.org/10.1080/15290824.2016.1117615>
- Lexico. (2021). *Definitions from Oxford Languages*: <https://www.lexico.com/definition/assess>
- Little, H., Elliott, S. & Wyver, S.R. (Eds.) (2017). *Outdoor learning environments: Spaces for exploration, discovery and risk-taking in the early years*. Taylor & Francis Group.
- Llinares, S. (2020). Indicators for the development of noticing: How do we recognize them?[Monograph 1]. *For the Learning of Mathematics*, 40, 38–43.
- Mason, J. (2011). Noticing: Roots and branches. In M. Sherin, V. Jacobs, & R. Phillip (Eds.), *Mathematics teacher noticing: Seeing through teachers’ eyes* (pp. 35–50). Routledge.
- Mason, J. (2020). Learning about noticing, by, and through, noticing. *ZDM Mathematics Education*, 53, 231–243. <https://doi.org/10.1007/s11858-020-01192-4>
- Mason, J. (2002). *Researching your own practice: The discipline of noticing*, Routledge-Falmer.
- Mason, J. (2017). Probing beneath the surface of experience. In E. Schack, M. Fisher, & J. Wilhelm (Eds.), *Teacher noticing: Bridging and broadening perspectives, contexts and frameworks* (pp. 1–17). Springer. [https://doi.org/10.1007/978-3-319-46753-5\\_24](https://doi.org/10.1007/978-3-319-46753-5_24)
- McClintic, S., & Petty, K. (2015). Exploring early childhood teachers’ beliefs and practices about preschool outdoor play: A qualitative study. *Journal of Early Childhood Teacher Education*, 36(1), 24–43. <https://doi.org/10.1080/10901027.2014.997844>
- Moore, D., Morrissey, A.-M., & Robertson, N. (2019). I feel like I’m getting sad there’: Early childhood outdoor play spaces as places for children’s wellbeing. *Early Child Development and Care*. <https://doi.org/10.1080/03004430.2019.1651306>
- Moreno, M., Sánchez-Matamoros, G., Callejo, M. L., Perez-Tyteca, P., & Llinares, S. (2021). How prospective kindergarten teachers develop their noticing skills: The instrumentation of a learning trajectory. *ZDM Mathematics Education*, 53, 57–72. <https://doi.org/10.1007/s11858-021-01234-5>
- Morrissey, A.-M., Scott, C., & Rahimi, M. (2017). A comparison of sociodramatic play processes of Preschoolers in a naturalized and a traditional outdoor space. *International Journal of Play*, 6(2), 177–197.
- Morrissey, A.-M., Wishart, L., & Moore, D. (2020). Early childhood outdoor environments: Places for play, learning and wellbeing. In A. Kilderry & B. Raban (Eds.), *Strong foundations: Evidence informing practice in early childhood education and care* (pp. 52–75). ACER Press.

- Northam, C. (25 May 2021) A different view of digital documentation. *The Spoke—Early Childhood Australia's Blog*. Accessed 19 October 2021. <http://thespoke.earlychildhoodaustralia.org.au/a-different-view-of-digital-documentation/>
- Parks, A. N., & Wager, A. A. (2015). What knowledge is shaping teacher preparation in early childhood mathematics? *Journal of Early Childhood Teacher Education*, 36(2), 124–141. <https://doi.org/10.1080/10901027.2015.1030520>
- Pyle, A., & DeLuca, C. (2017). Assessment in play-based kindergarten classrooms: An empirical study of teacher perspectives and practices. *The Journal of Educational Research*, 110(5), 457–466.
- Pyle, A., DeLuca, C., Daniels, E., & Wickstrom, H. (2020). A model for assessment in play-based kindergarten education. *American Educational Research Journal*, 57(6), 2251–2292.
- Robertson, N., Yim, B., & Paatsch, L. (2018). Connections between children's involvement in dramatic play and the quality of early childhood environments. *Early Child Development and Care*, 190(3), 376–389.
- Robertson, N., Morrissey, A. M., & Moore, D. (2020). From boats to bushes: Environmental elements supportive of children's sociodramatic play outdoors. *Children's Geographies*, 18(2), 234–246.
- Scheiner, T. (2021). Towards a more comprehensive model of teacher noticing. *ZDM Mathematics Education*, 53, 85–94. <https://doi.org/10.1007/s11858-020-01202-5>
- Smilansky, S. & Shefatya, L. (1990). *Facilitating play: A medium for promoting cognitive, socio-emotional and academic development in young children*. PS&E Publications.
- Stagnitti, K. & Cooper, R. (2009). *Play as therapy: Assessment and therapeutic interventions*. Jessica Kingsley Publishers.
- Stagnitti, K. E., Paatsch, L., Nolan, A., & Campbell, K. (2020). Identifying play skills that predict children's language in the beginning of the first year of school. *Early Years*, 1–15. <https://doi.org/10.1080/09575146.2020.1865280>
- Storypark & Early Childhood Australia (30 April 2021). Documentation: Do you document too much, too little or too late? *The Spoke: Early Childhood Australia's Blog*. <http://thespoke.earlychildhoodaustralia.org.au/documentation-do-you-document-too-much-too-little-or-too-late/>
- Superfine, A., Fisher, A., Bragelman, J., & Amador, J. (2017). Shifting perspectives on preservice teachers' noticing of children's mathematical thinking. In E. Schack, M. Fisher, & J. Wilhelm (Eds.), *Teacher noticing: Bridging and broadening perspectives, contexts and frameworks* (pp. 409–426). Springer. [https://doi.org/10.1007/978-3-319-46753-5\\_24](https://doi.org/10.1007/978-3-319-46753-5_24)
- Taylor, C. (2016). *The E4Kids study: Assessing the effectiveness of Australian early childhood education and care programs*. Melbourne Graduate School of Education. [https://education.unimelb.edu.au/\\_\\_data/assets/pdf\\_file/0006/2929452/E4Kids-Report-3.0\\_WEB.pdf](https://education.unimelb.edu.au/__data/assets/pdf_file/0006/2929452/E4Kids-Report-3.0_WEB.pdf)
- Waller, T., Årlemalm-Hagsér, E., Beate Hansen Sandseter, E., Lee-Hammond, L., Lekies, K.S., & Wyver, S. (Eds.) (2017). *The SAGE handbook of outdoor play and learning*. SAGE Publications Ltd.
- Waller, T. (2011). Adults are essential: The role of adults outdoors. In J. White (Ed.), *Outdoor provisions in the early years* (pp. 35–44). ProQuest eBook.
- Wishart, L. (2010). Embodying principles-properties-potential in dance. *Proximity Magazine*, 5(2), 4–9.
- Wishart, L. (2011). Nature teaches naturally: Present and future perspectives on nature-based, ecological and somatic learning. *Currents: A Journal of the Body-Mind Centering Association*, 14(1), 8–11.
- Wishart, L. (2018). Early childhood educator perceptions of children's physical activity and the outdoors. *New Zealand International Research in Early Childhood Education*, 21(1), 1–16.
- Wishart, L. (2019). *Understanding children's movement development in naturalised outdoor learning spaces: An early childhood educator and researcher learning journey* [Unpublished doctoral dissertation]. University of New England, Australia.
- Wishart, L., & Rouse, E. (2019). Pedagogies of outdoor spaces: An early childhood educator professional learning journey. *Early Child Development & Care*, 189(14), 2284–2298.

- Wishart, L., Cabezas-Benalcázar, C., Morrissey, A., & Versace, V. L. (2019). Traditional vs naturalised design: A comparison of affordances and physical activity in two preschool playscapes. *Landscape Research*, 44(8), 1031–1049. <https://doi.org/10.1080/01426397.2018.1551524>
- Wishart, L. & Clarke Lapin, H. (2001). Body-mind centering and children's dancing. *Currents: A Journal of the Body-Mind Centering Association*, 3(2), 17–20.
- Wright Miller, G., Ethridge, P., & Tarlow Morgan, K. (Eds.) (2010). *Exploring Body-Mind Centering®: An anthology of experience and method*. North Atlantic Books.

**Anne-Marie Morrissey** is Associate Professor in the School of Education at Deakin University. She has an extensive background in early childhood education, as both a teacher and centre coordinator. Since 1996, she has worked in early childhood teacher education, including as course coordinator of early childhood and primary/early childhood master of teaching courses. Her research interests include outdoor learning environments; play and play-based pedagogy; education and care programme quality; teacher professional learning; programmes for young gifted learners. She has led major research and professional learning projects in areas of play-based pedagogy, teacher mentoring, programme evaluation and outdoor playspace design, in partnership with government, industry and service providers.

**Llewellyn Wishart** holds professional qualifications in early childhood, adult and movement education. His teaching experience at Deakin University has been cross-disciplinary within the Bachelor of Health & Physical Education, Bachelor of Creative Arts (Dance), Bachelor of Early Childhood Education, Bachelor of Education (Early Years) and Master of Teaching programmes. He is Certified Body-Mind Centering® Practitioner, professional practice member of Body-Mind Centering® Association (BMCA Inc.), Registered Somatic Movement Educator (RSME) with ISMETA and holds a Doctor of Education (Ed D) degree from University of New England (UNE); he is an active researcher in the areas of movement education, physical activity, nature-based learning and the design of early childhood outdoor environments.

**Natalie Robertson** is Senior Lecturer in Early Childhood Education at Deakin University. She has worked on projects nationally and internationally that are focussed on children's dramatic play and play-based learning in early childhood education. She is contributing to national partnerships with the Department of Education and Training (DET) and Early Childhood Management Services (ECMS) to deliver the Early Childhood Professional Partnerships Project (2019–present). She is also contributing to an international partnership with Chor Hang Educational Research Institute to deliver the Examination of Curriculum Practices in Early Childhood Education (aged 3–6 years) in China project (2016–present). She has an overarching interest in teacher practice and professionalism of early childhood education. This interest, alongside her passion for children's play contributes to her teaching and learning at Deakin University as the Unit Chair and lecturer in units of child development, curriculum and pedagogy, professional practice and teacher inquiry.

**Deb Moore** With a background as a kindergarten teacher for over twenty years, he has been Lecturer in Early Childhood Education in a number of tertiary institutions over the past ten years. Her research interests and publications primarily focus on researching with children and their outdoor play environments, especially those places children physically or symbolically construct themselves for their imaginative play. This research interest has extended more recently into early childhood teachers' perceptions of these children's outdoor places from a pedagogical and personal perspective; with an understanding of the critical importance these places hold for young children's well-being. She is also researching into early childhood and primary teacher engagement with Environmental Education for Sustainability (EEFS).

**Virginia Kinnear** is Lecturer in Education (Mathematics Education) at Deakin University. She has teaching and leadership experience as an early childhood educator in both prior-to-school and school settings in the USA and Australia, and as a university lecturer in mathematics, where her teaching focus is in early years education. Prior to working in education, she worked as a government solicitor in both criminal and civil practice. Her initial education qualification and teaching experience was in early years Montessori education (3–6 years) which she gained while living in the USA. Her research interests are in young children’s statistical and mathematical learning and reasoning and how children’s dispositions to be engaged with mathematics can be fostered pedagogically. Email: [v.kinnear@deakin.edu.au](mailto:v.kinnear@deakin.edu.au)

# Chapter 7

## Documentation as a Tool for Changing Practices in Early Childhood Education



Kristín Karlsdóttir and Johanna Einarsdóttir

**Abstract** In Iceland as well as in other countries, teachers and researchers have begun revisiting notions of what constitutes effective assessment in early childhood education. In the accompanying critical debates over what assessment should target and how one proposed focus has been children's learning and, in turn, the need to test individual children. Another, by contrast, has proposed documenting how children learn within social contexts and using that information to transform teaching practices. Along those lines, this chapter presents a collaborative action research project that focused on documentation in five preschools in Iceland. In the project, the research team collaboratively investigated how educators developed documentation in their preschools and consequently collected and analysed multifaceted data from interviews, research diaries and the documentation itself. The findings capture the process that occurred as the educators began using documentation in their daily encounters with children, as their views towards children and their competences changed and as the children's perspectives became more visible in the preschools' daily life. From their own perspectives, the educators described how using documentation had strengthened their professional identities and that sharing documentation with parents had made their collaborations more fruitful. Even so, the educators also identified that a chief barrier to documentation at some schools was the limited time allocated for preparing and reflecting on documentation. In addition, only a few of the educators managed to meaningfully involve children in developing and reflecting on documentation.

---

K. Karlsdóttir (✉) · J. Einarsdóttir  
School of Education, University of Iceland, Reykjavik, Iceland  
e-mail: [krika@hi.is](mailto:krika@hi.is)

J. Einarsdóttir  
e-mail: [joein@hi.is](mailto:joein@hi.is)

## 7.1 Introduction

In the long-standing debate over how to assess the quality of preschool practices and assure the value of early childhood education for children worldwide, ideas about which practices should be assessed have varied and are manifested in policy in diverse ways. In some cases, educators have also faced complex challenges in bridging gaps not only between policy and practice (Moss et al., 2016) but also between their own educational views and practice.

The study reported in this chapter was conducted in Iceland, where preschools are universal for all children once they turn a year old until they start primary school at the age of 6 years. The aim of the study was to work with preschool educators to develop methods of assessing children's learning and well-being. Icelandic policy, as stated in the National Curriculum Guide for Preschools (Ministry of Education, Science and Culture, 2012), declares that assessment should involve gathering information about what children do and are interested in and be both process-oriented and formative. As such, the information obtained from assessments can be used to support the learning and well-being of children, both in the organisation of preschool activities and in forms of support and care for each child. In that way, the National Curriculum Guide for Preschools assumes that children's education takes place in creative, integrated preschool activities and that every child learns through play and discovers solutions by communicating and collaborating with peers. In that context, the role of educators is thus to encourage children to engage with what interests them and to support children's ability to actively find solutions in their environments (Ministry of Education, Science and Culture, 2012).

## 7.2 Theoretical Background

### 7.2.1 *Changing Views on Children, Learning and Assessment*

Traditional assessment in the early years emphasises what educators consider to be important and appropriate for children to learn and typically focuses on what children can do without the help of others (Brooker, 2008). This emphasis aligns with the latest policy proposals issued by the Organisation for Economic Co-operation and Development (2011, 2015), and exemplified by the International Early Learning and Child Well-Being Study (2020), which stress outcomes for preschool children to be gauged by standardised testing.

However, because the practice of such assessment is guided by standardised lists of developmental levels or specified learning items, it raises the question of whether children need to pass formalised assessments in order to objectively demonstrate what they have learned. Traditional assessment has also been criticised for often leading educators, as well as parents, to compare children's abilities, which can engender competition between children and preschools to outperform their peers

(Brooker, 2008; Carr, 2014). As a consequence, educators are likely to experience pressure to show how competent they as educators are, not only by verifying their practice in tangible ways and thus the effectiveness of the pedagogy used, but also by presenting data about what children can do, most often in terms of using concrete academic skills (Vandenbroeck, 2020).

Added to that, Vandenbroeck (2020) has cautioned that traditional methods of assessment can overlook empathy and the human factor in education by seeking to be primarily objective in nature. Such objective assessments can prompt policymakers to forgo discussions that are needed to reflect on “what education is for and what society we dream of for our children” (Vandenbroeck, 2020, p. 414). On the contrary, policymakers and educators should focus on assessing children’s competences in more subjective ways, including by evaluating their social and emotional skills (Vandenbroeck, 2020).

Standing in contrast to traditional assessment is child-friendly assessment, which emphasises children as participants in assessing their own learning (Brooker, 2008). The practices of child-friendly assessment involve having educators and children examine what they can do in collaboration or with the support of other adults and/or children. Such assessment is regarded as being formative in nature, for the information gained can be used to influence pedagogical practice and support children’s learning and, by extension, bolster their social skills and their well-being (Brooker, 2008; Carr, 2014).

Taken together, those contrasting views have led educators to serve two masters: one claiming measurable and objective assessment; the other emphasising responsive and subjective assessment involving empathy, socio-cultural and human factors to support children for life in the twenty-first century (Vandenbroeck, 2020).

### 7.3 Assessment in the Light of Contemporary Views

Child-friendly assessment (Brooker, 2008) is organised in the spirit of contemporary ideas about learning and emphasises children’s right to influence the preschool context and to be agents in their own lives (Mayall, 2003; Prout & James, 2015). Thus, it aims to integrate the perspectives of children themselves and involve them in the assessment of their own learning—for example, by listening not only to children’s words but also their voices, their varied expressions, and their body language.

Child-friendly assessment targets not only what is important for the child but also what arouses their interest and promotes their cooperation and connection as they coordinate multiple perspectives in relations to their peers. As such, it can involve identifying what children already know and/or what they are thinking at the moment. In that process, educators should attend to children’s perspectives and acknowledge the power balance within groups of children and between children and educators. By supporting children’s ideas emotionally as they confront challenging tasks (Berk et al., 2006; van Oers & Duijkers, 2013), educators validate children’s agency and their feeling of competence and control.

Educators employing child-friendly assessment, at the same time, can attend to their own professional development through reflective practice. Oliveira-Formosinho and de Sousa (2019) have encouraged educators to explore how children's rights are reflected in their preschools' day-to-day pedagogy, using as a lens, the differences between transmissive pedagogy and pedagogy-in-participation:

During the reflective and critical time, the educator needs to develop a pedagogic mediation that knows how to step back, to look and listen; a pedagogic mediation that knows how to suspend its own voice in order to give ground to the voice of the child. (Oliveira-Formosinho & de Sousa, 2019, p. 38)

In this way, child-friendly assessment can be a powerful innovation in transforming teaching practice and fostering agentic and empowering learning experiences.

## 7.4 Documentation in Early Childhood Education

Educators and researchers in various countries have developed methods to integrate the development of educator's professionalism with children's learning by building on their interests and ideas (Oliveira-Formosinho & de Sousa, 2019). According to those authors, enactment of curriculum in the daily work of preschools results from an ever-changing process in which it is assumed that educators connect theory and practice via reflection. To facilitate that process, documentation has been widely used, even in assessing preschool practice (Oliveira-Formosinho & Peeters, 2019). In many countries, those methods have been developed based on the cultural context, while in others, inspiration has been taken from other countries or regions.

In our study, inspiration for documentation derived from two such approaches: the learning story approach developed in New Zealand and pedagogical documentation developed in preschools in the city of Reggio Emilia in Northern Italy. Both approaches are progressive in that their aims are to reconceptualise education, especially by attending to the power differential between children and educators. Although the social situations in both countries where the approaches were developed were shaped by different forces, they nevertheless stemmed from the need for societal change and to build a better society for young children and their families. In Reggio Emilia, after the collapse of fascism following World War II, parents and educators' vision was to build not only new schools for their children but also a just and democratic society (Malaguzzi, 1998). In New Zealand, by comparison, a new bicultural national curriculum, *Te Whāriki* (Ministry of Education, 1996, 2017), first published in 1996, sought to incorporate "ecological and socio-cultural philosophy about what to teach, what children learn and what an educational environment looks like" (Carr & Lee, 2019b, p. 4).

In the city of Reggio Emilia, pedagogical documentation was developed in order to explore children's experiences, meaning and ideas, to reflect on them, to carefully listen to their ways of thinking, to read into their expressions and to use the entire



process as a force for change (Dahlberg et al., 2013; Giudici et al., 2001). To those ends, educators can use different methods as they develop the documentation, which can include written notes, photographs, video- and audio-recordings and children's artwork. Educators document children's and their own thinking processes in order to listen to children's hypotheses and theories, as well as their fantasies, and to explore ways of challenging children's learning processes and, in turn, continually extend their own professional development (Rinaldi, 2006). Documentation can thus be viewed as a process that supports learning as well as teaching, and because it is reciprocal and shareable, it becomes akin to a visible trace that can double as a tool for assessment or evaluation. In that sense, documentation can be an alternative to traditional assessment, for it neither contextualised nor objective (Rinaldi, 2006). In New Zealand, the learning story approach was developed based on similar goals and methods but always with the clear purpose of using learning stories as another kind of assessment method that considers different cultural values (Carr, 2001, 2014). The learning story approach is designed to provide a form of assessment that affirms the language, culture and identity of children and their families, and to foster early childhood communities that reflect the bicultural heritage of New Zealand.

Such learning stories are designed to provide a cumulative series of narratives told in writings, photos and/or videos showing children participate in preschool activities (Carr, 2001). In the documentation, both individual learning and engagement, as well as moments of interaction within groups in early childhood settings can be explored (Peters & Davis, 2011). Learning stories can also give insight into how children construct and develop their meaning making in relation to their own and others' learning as they take part in play and creative activities (Carr, 2014; Peters, 2009), all with the purpose of making children's perspectives visible to themselves and others. At the same time, learning stories also serve the purpose of affirming children as agentic learners (Carr & Lee, 2019a).

The learning story approach focuses on learning dispositions amongst children, namely whether they are ready, willing and/or able to learn (Carr & Lee, 2019a). Learning dispositions are about how children approach learning and participate in learning communities (Carr, 2014). The strands of learning dispositions have been incorporated into New Zealand's curriculum, *Te Whāriki* (New Zealand Ministry of Education, 2017), described by dispositional frames of reference, for instance, belonging (taking an interest), well-being (being involved), exploration (persisting with difficulty), communication (expressing an idea or feeling) and contribution (taking responsibility) (Carr, 2001). The assessment focuses on children's capabilities by reflecting on how they express their ideas and emotions and show compassion and responsibility in regard to themselves and others. The five strands of learning dispositions in *Te Whāriki* have been developed for evaluation. In a preschool context, educators observe the appearing patterns of learning, from the child's perspective. Building on the ethnographic observations of *Te Whāriki* in action as well as research literature on children's learning, hypothetical questions, referred to as "Child's Questions" are used by the educators as they display children's learning stories that are written from the child's perspective, describing children's ways of learning (Carr et al., 2002).

In Carr et al. (2002, pp. 119–120), the five strands of learning dispositions are put forward by the educators, from the “Child’s Questions”:

- Belonging—do you know me?  
Do you appreciate and understand my interests and abilities and those of my family?
- Well-being—can I trust you?  
Do you meet my daily needs with care and sensitive consideration?
- Exploration—do you let me fly?  
Do you engage my mind, offer challenges and extend my world?
- Communication—do you hear me?  
Do you invite me to communicate and respond to my own particular efforts?
- Contribution—is this place fair for me?  
Do you encourage and facilitate my endeavours to be part of the wider group?

As educators develop learning stories, they seek support from the “Child’s Questions” and write under the strands of learning dispositions, from the child’s perspective, by addressing the child directly. The learning dispositions support the educator’s and the child’s exploration as they read into the child’s expression, clarifying the child’s ideas and their own and other children’s emotions.

## 7.5 Challenges and Benefits of Documentation

Research has shown that documentation can be a helpful tool for educators to come closer to children’s perspectives and further develop their professionalism (Garðarsdóttir and Karlsdóttir, 2012; Karlsdóttir & Garðarsdóttir, 2010; Karlsdóttir & Hreinsdóttir, 2015). Research has also shown that documentation can be an effective way to shed light on children’s strengths and gain insights into how they learn, to support educators’ professional development and to facilitate interactive dialogue with colleagues and children’s parents alike (Carr & Lee, 2019b; Garðarsdóttir and Karlsdóttir, 2012; Karlsdóttir & Hreinsdóttir, 2015; Rintakorpi, 2016). Other studies have shown similar results revealing how educators can use documentation for reflection and to inform parents by displaying how skilful their children are as they communicate with other children and adults in the preschool (Alvestad & Sheridan, 2015; Aras et al., 2021; Carr & Lee, 2019a; Sharmahd & Peeters, 2019).

The findings of those studies suggest that documentation can give educators profound insight into children’s interests, their views and how they can go about developing knowledge and finding solutions. However, other studies have revealed challenges involved in the practice of documentation. Löfgren (2016) found that some educators found themselves trapped in the process of documentation at the expense of close educator–child interaction. Some educators in that study rarely referred to or discussed their documentation, and, if they did, they tended to discuss formal learning, not social or emotional issues (Löfgren, 2016). Other studies have

described the advantages and disadvantages of using technology in documentation (Alvestad & Sheridan, 2015). Amongst the advantages, digital technology can increase and support children's participation in documentation and make it easier for the educators to simultaneously communicate with children and make digital documentations.

Amongst the disadvantages of documentation in general, many are associated with power relations between educators and children in the process. After all, the power is in the hands of the educators, who make the decisions about what is being documented, who are more skilled writers and who have better access to devices to use in documentation (Areljung & Kelly-Ware, 2020). Furthermore, because educators tend to lead the assessment process, they are liable to formulate new criteria for children's competence, referred to by some as the "new normalisation" (Kampmann, 2004). From another angle, the chief challenge in developing methods of documentation, at least in the view of educators in the Nordic countries, has been a lack of time, especially time for reflection (Alvestad & Sheridan, 2015; Karlsdóttir & Hreinsdóttir, 2015).

## 7.6 Research Questions

Our study was based on contemporary perspectives on children and childhood (Dahlberg et al., 2013; Prout & James, 2015; Qvortrup, 2009), which view learning as taking place in a social context. Not only are children's viewpoints valued, but emphasis is also placed on children's right to influence the preschool context and to be agents in their own lives (Mayall, 2003; Prout, 2011; Prout & James, 2015). The aim of the study was to work with preschool educators to develop methods to assess children's learning and well-being. To that aim, two research questions were formulated:

1. How do educators develop documentation focusing on preschool children's learning and well-being?
2. What challenges do educators face while developing new assessment methods in preschools?

## 7.7 Methodology

A collaborative action research project was conducted to develop methods to capture children's social and emotional learning. The overarching aim was to gain insights into children's views, interests, well-being and ways of making meaning—that is, how they discover solutions and develop their own learning.

The initiative for the study originated from an agreement between five municipalities in south-western Iceland's Capital Region and the Centre for Research in Early

Education at the University of Iceland, the purpose of which was to create opportunities for preschool educators to participate in a project on developing methods to assess children's learning and well-being. The municipalities promoted the project, and all preschools in each region had the chance to apply to participate in the study.

During the study period, spanning three academic years, participants acquainted themselves with documentation and planned the project in the first year. In the second year, the educators implemented the methods while the master's students generated data. Last, the third year was dedicated to processing the data, conducting analysis, writing reports on the findings and disseminating the work beyond the participating preschools.

## 7.8 Participants

Five preschools in the Capital Region were ultimately selected to participate in the project. The research team consisted of 25 educators working in those five preschools, five university teachers and five master's students. About half of the educators were preschool teachers, each with a master's degree in preschool teacher education, whereas the other half were assistant teachers. The educators who formed part of the research team also assumed responsibility for sharing experiences from the study with other educators in their preschools. Throughout the study's various processes, the 35 participants collaborated, exchanged knowledge and reflected on documentation and assessment in the preschools. Through their partnership, the research team collaboratively investigated how educators developed documentation in their preschools and consequently generated multifaceted data via dialogue and reflection.

## 7.9 Method

The method was inspired by and intended to realise collaborative action research. In the study, *collaborative action research* meant that preschool educators and researchers from a university worked together on a common project (Einarsdóttir, 2013; Koshy, 2010), namely to improve assessment practices in preschools. The educators served as the experts of their profession and led the process of changing their practice (McNiff, 2017) and developing their professionalism (Einarsdóttir, 2013, 2016; Sigurðardóttir & Einarsdóttir, 2018). Meanwhile, the researchers from the university supported the educators and encouraged them to express their views and visions for change in their practices. Throughout the study, the teams from the preschools and the university learned from each other by listening with open minds and reflecting on the choice and implementation of new assessment methods. The researchers from the university also gained insights into ways of linking preschool practice and theory (Kemmis et al., 2014; Sigurðardóttir & Einarsdóttir, 2018).

Planning action research is not a linear process (McNiff, 2017). On the contrary, so-called “cues” are put forward to support the participants in moving towards new directions in their practice (Mac Naughton & Hughes, 2009; McNiff, 2017). The cues followed in our study were:

- *Choosing the subject*, by having participants explore and determine what is of concern;
- *Planning the process*, by having participants reflect on and seek solutions regarding how practices could be changed;
- *Implementing practices and generating data*, by having participants throughout the process put new practices into action and document the process;
- *Reflecting on the process*, by having participants explore what works well and what needs further development; and
- *Introducing new practices*, by having participants disseminate experiences from the study to groups wanting to learn from their experience, including educators, children, parents and other stakeholders.

### ***7.9.1 Choosing the Subject***

During the first steps of the research project, educators from all participating preschools engaged in a mind-mapping session in which they explored their perspectives on children and children’s learning and, at the same time, mapped the assessment methods used in their preschools. Because the participants ultimately regarded social skills and children’s well-being as being the most important domains of learning in preschools, they concluded that adding some form of documentation to the assessment method in the preschools might help to provide insights into children’s ways of interacting and their ideas, creative power and well-being.

### ***7.9.2 Planning the Process***

In line with the action research design, the participants in each preschool chose and developed ways of documenting and using the information for assessment in accordance with the curricular guidelines in all five preschools. In four of the preschools, educators decided to take inspiration from documentation according to the learning story approach developed in New Zealand, whereas the other preschool sought guidance from the pedagogical documentation approach developed in Reggio Emilia.

### ***7.9.3 Implementing Practices and Generating Data***

In each preschool, the implementation of practices was planned according to situational differences in the preschool context, including who the educators and children were, the possibilities presented in the preschool environment and the emphases in each school's curriculum. For their part, the educators experimented with and developed their documentation practices and shared their experiences with each other. The master's students, by comparison, were tasked with supporting the process of the preschool team and conducting interviews with the educators at the beginning and end of the second school year during the 3-year study period. Every month, the master's students also participated in reflection meetings with the educators and advanced points for discussion with the goal of supporting reflection. All participants were encouraged to keep a research diary, some of which were shared with the university team and integrated into the data set, as was documentation from the educators and observations from the master's students.

### ***7.9.4 Reflecting on the Process***

Reflection took place during meetings was captured in the participants' research diaries and was sometimes recorded and transcribed. The aim of reflections was to explore what could be learned from the experiences during the study and which strategies were working and which were not. Reflection focused not only on whether the documentation was useful as a method of assessing children's learning and well-being but also on the educators' own professional development: how they were at once improving their documentation methods in their preschools and their interactions with the children there.

### ***7.9.5 Introducing New Practices***

Throughout the research process, participants disseminated their experiences from taking part in the study to other educators in their preschools. The university team, master's students and researchers worked as a group in processing the data, analysing the findings and sharing their reflections. During analysis, the master's students also shared their reflections with the educators and drafted an article with their research supervisor. The results of the study were introduced at seminars and conferences in Iceland and at one international conference.

## **7.10 Data Analysis**

Data were analysed as they were generated. The data set included the transcribed interviews, the research diaries, all documentation of the research team's discussions and reflections, transcripts from audio-recordings, photographs and videos. The researchers from the university gathered all data for a final analysis inspired by thematic analysis following Braun and Clarke's structure (2013). The researchers read and reread the data, closely explored and reviewed the contents and sought information that could serve the purpose of the study. After a thorough exploration of the data set, the themes discovered were organised into key labels. Next, the key labels from the five preschools were unified under five headings: contrasting views on children's learning and assessment, children's views becoming more visible, the professional development of educators, extending collaboration with families, involving children in documentation, reflection and narrative modes of assessment and the role of technology in documentation. In the next section, the findings are discussed under the above headings.

## **7.11 Findings and Discussion**

In all five preschools, the educators' views on children and their learning evolved over the course of the collaborative action research project. Nevertheless, in two of the preschools, information from the documentation, learning stories and pedagogical documentation was only used to a small extent to change practices and develop new methods of assessment. By contrast, in the three other preschools, not only were new assessment practices adopted, but practices within the classrooms and the preschools as a whole were transformed as well.

## **7.12 Contrasting Views on children's Learning and Assessment**

In the mind-mapping session at the beginning of the project, the educators explored their own perspectives on children and children's learning while mapping methods of assessment currently used in their preschools. The educators most frequently identified communication, independence, social skills, welfare and well-being, expression, creativity and values as being the most important domains of learning for children in preschools. At the same time, the most frequently mentioned methods of assessment used in all participating preschools focused on capturing details of children's language and physical development, although a few of the educators mentioned using children's personal portfolios, learning stories and the ECERS scale (Harms et al.,

2014). Thus, the educators' views on children's learning and methods of assessment often diverged. On the one hand, the educators saw social competence and good communication skills as important focuses for preschool children's learning; on the other, the methods of assessment that they used focused mostly on children's language development, physical and academic skills.

Those discrepancies found in the educators' views and the methods of assessment used in their preschools were consistent with past findings (Garðarsdóttir & Karlsdóttir, 2012; Karlsdóttir & Hreinsdóttir, 2015). Furthermore, research from various countries has confirmed that educators prioritise supporting preschool children's social competence instead of focusing on skills that promote academic learning, including language, reading and mathematical skills (Einarsdóttir, 2017; Einarsdóttir et al., 2015; Hollingsworth & Winter, 2013; Johansson & Broström, 2015; Pramling Samuelsson, 2010). Such priority is at the heart of the debate over whether assessment should be objective or subjective. Despite the long-standing focus on the importance of traditional assessment to gather objective data about what children can do, most often in terms of concrete academic skills, contemporary innovations have taken a stance on the value of child-friendly assessment, prioritising the role of education as transformative and looking to the future society envisioned for children. Those parties stress the importance of using assessment methods that focus on evaluating children's competences, including their social and emotional skills, of more subjective nature (Brooker, 2008; Vandenbroeck, 2020).

### 7.13 Children's Views Becoming More Visible

The educators in each preschool used documentation methods of their choice, mostly photographs and text, or video, sometimes by putting forward a particular aim but also just capturing daily activities for further exploration of children's strengths. Through the process of documentation, the educators were able to gain insights into children's play and become more aware of children's ideas and interests. One of the educators expressed the view that documentation was both stimulating and enjoyable because it tended to reveal new information about the children: "It is fun to follow the children. You often discover something you did not know" (Jóhannsdóttir & Ólafsdóttir, 2020, p. 7). The educators also found their understanding of children's ideas and perspectives had become more explicit and more likely to yield information about children's strengths and well-being. As one educator stated, "We don't need to assess what the children know, rather what they are doing ... to look at what is happening in the child's live at this exact time" (Steingrímsson & Karlsdóttir, 2020, p. 9).

By reading into the children's expressions and taking their views into account, the educators became empowered to understand the children's actions. They also expressed their expanded knowledge of how the children deal with and solve different situations, including how they find solutions and understand and meet others' views. In the words of one educator, "You cannot write of a child as being incompetent if



they act in a certain way, there is always something behind the child's expression" (Steingrímsson & Karlsdóttir, 2020, p. 11). That finding corroborates the results of past research on documenting learning stories (Karlsdóttir & Hreinsdóttir, 2015).

In some of the preschools, the educators seemed to focus primarily on what specific groups of children were incapable of doing. That trend became clear, for example, in relation to children who spoke a native language other than Icelandic, for whom the educators focus was on their limited ability to express themselves in Icelandic. Through documentation, however, the educators were more inclined to identify the children's strengths and based their interactions with the children on those skills and competences. In one of the preschools, the educators made learning stories for all of the bilingual children and focused on understanding the children's body language. Following the documentation process, one of the educators described their interaction with one of the children: "Because the child does not have the language, I had to use facial expressions and I looked at his expression ... this became like a good tool" (Gústafsdóttir & Sigurðardóttir, 2020, p. 12). The educators additionally followed the children's play by looking closely at their expression, including how they reacted to what other children did and whether the children were connecting to each other during play: "In this way, we managed to follow more than just the words in use. I thought that the words were the most important [to read into the children's expression] that we would get most out of listening to words...but it was not so" (Gústafsdóttir & Sigurðardóttir, 2020, p. 12). By reading into other kinds of expression, including body language, the educators came closer to recognising the children's strengths and consequently finding new ways to support the children's learning.

Those findings are in accordance with past research on using learning stories in preschool practice to work with bilingual children. In both that study ours experience revealed that documenting children's strengths facilitated more effective and responsive approaches with that diverse group of children, for it became more accessible for the educators to meet the children, each in their own way (Karlsdóttir & Hreinsdóttir, 2015).

## 7.14 The Professional Development of Educators

Most of the preschool educators reported that their professional identities had become strengthened through their participation in the study and that they had become encouraged to develop their preschool towards interactive, co-constructive communities of children and educators. In some of the preschools, the educators described that documenting and reflecting on learning stories not only influenced their professional development but also supported their interactions with other educators. That inroad also served as a way to share experiences and knowledge gained from participating in documentation with other educators in their preschools who had not participated in the study.

Documentation also proved to be useful when different views on children and their activities surfaced amongst educators in a classroom. An educator in one of the preschools described one such activity as follows:

They boys were playing, acting as superheroes and climbing rather high. The educators wanted to hinder these climbing efforts and forbid the boys climbing, as it seemed dangerous. One of the educators did not agree with this, according to her view the boys were practicing being afraid, doing an activity they scarcely dared to do. She suggested the educators would make documentation and as reflecting on the documentation, the educators were able to read into the boys' expression, see what they were capable of doing and after this coordinate their practice (Steingrímsson & Karlsdóttir, 2020, p. 10).

In that and similar ways, the educators used documentation to visualise new perspectives on children and their learning and at once experienced that their professional image and teaching practice was evolving and becoming stronger.

These results align with past findings on documenting learning stories (Garðarsdóttir & Karlsdóttir, 2012; Karlsdóttir & Hreinsdóttir, 2015) showing that after educators had familiarised themselves with documentation, their perspectives on children had changed, followed by a changing practices in their preschools' pedagogy (Garðarsdóttir & Karlsdóttir, 2012). They also relate to what has been referred to as "professional journeys" (Formosinho & Peeters, 2019, p. 2), during which the narrative documentation of children's learning stories strengthens the educators' professionalism (Carr & Lee, 2019b). In the same vein, Rintakorpi (2016) has suggested that when educators become more aware of their interaction with children, they reflect on their views on children and their activities which supports professional growth.

## 7.15 Extending Collaboration with Families

Early in the documentation process, many of the educators began sharing the children's learning stories with their parents, mostly in planned parent–educator meetings at which individual children's stories were discussed and reflected on. The discussions also often evolved around what the learning stories revealed about children's perspectives, interests and strengths. The educators described those meetings as relaxed and fruitful and that the parents seemed interested in exploring the learning stories and appreciated gaining a clearer picture of the children's activities and what they had experienced in the preschool. Following those meetings, some families—parents, children and even grandparents—started to share stories from home with the educators. In three of the preschools, the educators further developed the collaboration and made portfolios with learning stories for each child, and in two of those preschools, the children occasionally took their portfolios home. The educators saw those interactions as a helpful addition to working with families, which is consistent with previous research conducted in Iceland in which educators experienced learning

stories as an important way of supporting such connections (Garðarsdóttir & Karlsdóttir, 2012). Sharing learning stories with families can also serve as a tool for developing democratic parent–educator relationships, ones with an equal power balance that affords parents opportunities to express their views and be active partners in documentation and the process of assessment (Carr & Lee, 2019a; Sharmahd & Peeters, 2019).

## 7.16 Involving Children in Documentation

Because only a few of the educators managed to include the children in the documentation process, in most participating preschools, the children’s reflections did not become a systematic part of assessment practice. Instead, the children’s reflections occurred casually during documentation. Nevertheless, some of the educators developed methods in which children’s reflection became part of their learning stories, even if often informally. The following is an example from one of the preschools:

In one preschool, the educators of the youngest group of children, in their third year, became aware of that these young children were more capable than they had sensed before they started to document learning stories. The educators started to see children’s strengths and skills they had not noticed before. Photographs with short text were printed out and put up on a wall in the children’s height. The children showed great interest in the photos, explored and reviewed what had been happening, pointed at the photos and explained to the educators and their parents what they had been doing, but also, with their peers, the children discussed own and other children’s documentation, expressing themselves through movement, sounds and words. In this way, the photos became a platform for discussing and debating, where the children’s reflection was included in developing the documentation and finally were included in the children’s portfolios. (Kuzminova et al., 2020, p. 15)

This underlines how documentation can be even more useful working with young children, even infants and toddlers. In past studies, when educators have reflected on and developed their learning stories with children, the process mostly occurred during day-to-day interactions. Therein, the educators detected children’s interests and, with that knowledge, could build upon their initiative during reflection, guiding subsequent teaching supports (Garðarsdóttir & Karlsdóttir, 2012; Karlsdóttir & Hreinsdóttir, 2015).

Having children contribute to documentation has been considered a means of supporting children’s agency (Alasutari et al., 2020). Via documentation, children are empowered to use their experiences by making meaning of them, including by being active participants in the learning story assessment (Carr & Lee, 2019a), and, in turn, influence their environments (Carr, 2011, 2014; Hedges, 2010; Peters & Davis, 2011). In one study exploring children’s reflection, “something other than expected emerged”; children’s reflections revealed that the overriding focus was not on the activities documented but on how they made sense of the situation and recreated what was already familiar to them (Elfström Petterson, 2020, p. 142).

In our study, although reflecting with children had not developed as much as the educators had wanted, the documentations occasionally gave the educators clues to

when and how children's reflection might become a natural part of the documentation process. By doing so, they could identify situations in which the children showed interest in reflecting on their documentation. That outcome aligns with what the experts and researchers on learning stories have described as being vital to the documentation process. New information from the documentation afforded clues and ideas that expanded possibilities for accessing children's perspectives, identifying their interest in leading the reflection process and finding ways to support children as agents (Carr, 2011, 2014; Carr & Lee, 2019a).

### **7.17 Reflection and Narrative Modes of Assessment**

At monthly meetings, the educators in each preschool and the master's students discussed the progress of the study and reflected on the documentation generated. Furthermore, at large meetings with all participants, a part of the agenda was allocated for educators to introduce and reflect on documentation. Most of the educators, however, did not plan special meetings for reflecting on children's documentation with other educators. On the contrary, reflection mostly occurred in the preschools during informal discussions amongst the educators—for example, during coffee breaks. Reflecting on the documentation amongst participants in the study therefore could have been far stronger than it ultimately was. Of course, that trend counters theories and practices about documentation, which tend to view reflection as a vital part of the documentation process. According to the learning story approach in New Zealand and pedagogical documentation in Reggio Emilia, reflection is so critical to documentation that its absence can entirely preclude the usefulness of documentation (Carr, 2001; Rinaldi, 2006).

However, some of the educators did reflect on their documentation or learning stories and connected them to strands of learning dispositions—for example: taking an interest, being involved, persisting with difficulty, expressing an idea or feeling and taking responsibility. In other cases, the documentation and learning stories related to issues in Iceland's National Curriculum Guide for preschools (2012) or even the preschool curriculum, in both cases involving strands that were socially and emotionally connected. In one preschool, the educators designed a form with a frame to use when reflecting on documentation. The issues that they reflected on in relation to documentation included whether the child found solutions with reference to their experiences during play, interacted within the environment, connected to other children and respected their and others' artefacts, initiative and creativity. The educators who used those criteria seemed to find support for assessment in those frames, for they were close to their own views and adhered to the National Curriculum Guide for Preschools (2012). Using some kind of a frame for documentation was also helpful if the group of educators had different views on a child. As one educator said:

Through the years I have often witnessed ... [someone saying] Joe, he is so terribly restless. Just because the child needs much attention in the changing room or at the dinner table...and then to look at the same child when playing ... unbelievably talented ... a leader. Just to sit down and look at this child gives you a lot. (Kuzminova et al., 2020, p. 10)

Similar results have emerged in former studies on documenting learning stories (Garðarsdóttir & Karlsdóttir, 2012; Karlsdóttir & Hreinsdóttir, 2015). In situations in which educators worried about a child, they made documentation focusing on the child, and after making learning stories, the educators saw the child's ways of interacting in a different light. With support from criteria regarding learning dispositions or the National Curriculum Guide for Preschools, the educators more clearly saw children's strengths where they had previously seen problems (Karlsdóttir & Hreinsdóttir, 2015). An important part of the process of documenting learning stories is indeed reflection, sometimes by using frames of dispositions and making outcomes visible, outcomes that can be used in formative assessments of learning to adapt learning and teaching in the preschool as a means to accommodate the children's interests and ability and support them in using their knowledge (Carr, 2014; Carr & Lee, 2019a).

## 7.18 The Role of Technology in Documentation

The educators developed ways to digitally store and arrange documentation; photos and videos. In some of the preschools, the use of digital technology went further, with the use of specific programmes for documentation. In two of the preschools, the educators used Book Creator, a programme specifically designed for organising and developing documentation. The educators explained that using Book Creator was easy and useful when informing parents about children's learning and well-being. By using the programme, the educators perceived themselves as becoming skilled and confident both in documentation and in using digital devices: "It is so simple to use, to be able to grab the tablet gives you lots of information ... It is so much easier when you have learned to handle the app ... as we say, you just do this and at the same time the children are playing, using the hollow blocks" (Einarsdóttir & Björnsdóttir, 2020, p. 10). The educators highlight one of Book Creator's most promising features—that is, the possibility of making portfolios for each child—which they wanted to continue to use. The educators also expressed that when using Book Creator, reflection might have partly differed and taken place more gradually. One of the educators added that reflection could sometimes be subject to technical possibilities and limitations.

Digital portfolios allow the use of a variety of features that can empower the participation of parents and children in documentation. It should be acknowledged, however, that digital documentation can easily lead children to being subject to more control from adults. For instance, they might continually be asked to reflect on their own actions instead of receiving the space and time to play and enter the flow of learning in the moment (Knauf, 2020).

## **7.19 Benefits and Challenges of Participating in Collaborative Action Research**

The educators in the five preschools experimented with various ways of finding their rhythm in engaging in documentation. They tried documenting at different times during the day, as well as in small and large groups of children, and sought to identify which methods—written notes, photos and/or videos—suited them as educators and their particular group of children. In turn, their choices also affected how they would file the documents and make them visible to others, inside or outside the preschool. During that process, contrasting reactions surfaced. Some educators identified that they felt uncertain and insecure and sought support through asking for directions on how exactly the documentation should be done, as if looking for a recipe that would describe all of the right steps to be taken. At the same time, other educators soon sensed how much closer they had become to the children's perspectives, which encouraged them to find new ways not only to approach the children but also to reflect on their professional methods in the preschool.

Although most participants sensed how engaging and useful it was to make documentation that could furnish information about the children's views, interests and skills, they also experienced conflicts in relation to time. Strain existed between finding time for documentation and having to follow a full programme for the children, to keep the daily schedule and adhere to the preschool's agenda. In this sense, time for documentation was not foregrounded and probably not seen as profitable or useful to verify measurable quality in the preschools. Even though, most of the educators applied the information from the documentation to meet children's interest and make changes by accommodating the group and the individual children, sometimes by changing the daily schedule.

When discussing the lack of time and opportunities to make the documentation, some participants expressed frustration and characterised having to find time to reflect with other educators and find ways to involve parents and children in developing documentation and learning stories as being problematic. They also mentioned that time was needed to organise and rewrite documentation, to prepare the stories for display and to add reflections to allow the documentation to be used in assessment. In most of the preschools, the pre-existing traditional assessment methods continued to be the chief methods, meaning that the documentation, as part of child-friendly assessment, was an addition to the information already captured and used differently by each educator or in each classroom. Some of the educators explained that documentation had been another task on top of all of the other ones that they needed to complete. From that perspective, they did not perceive the value of documentation and/or viewed it as an assignment that they needed to undertake without being relieved from other parts of their work or receiving additional help. Many of the educators expressed their frustration by saying that the documentation, in becoming part of their work, was the last item on their to-do lists and, as such, often postponed.

The findings from the study show that the experience of participating in the action research on assessment was diverse and personal for the educators. Most broadly,

it related to the participants' education and experience with working with young children in preschools. A few participants stated that their views on children and assessment had not changed significantly, whereas others reported clear changes in their views on children and children's learning. Interestingly, the assistant teachers, in not being educated as preschool teachers, seemed to gain the most from participating in the study. Their knowledge about assessment was slight before the study, and they had not given it much thought. As one of the assistant teachers expressed, "In the beginning, I really did not know what it was about. I learned lots of stuff and it was really fun" (Gústafsdóttir & Sigurðardóttir, 2020, p. 8). The participant added the most important issues were:

Is the child happy? Is the child participating? Does the child find this fun? Does the child find this interesting? ... Is there a smile on the child's face when staring to work on an assignment? As I am introducing what we are going to do, do I see excitement in the child's face? ... Generally seen this is just: is the child happy?...you know".(Gústafsdóttir & Sigurðardóttir, 2020, p. 8)

In other studies on documenting learning stories, both in New Zealand and Iceland, the educators also discussed the lack of time as a hindrance, which has been a general finding about experiences captured by action research. The educators struggled to find time for reflection with other educators and with children, and the documentation process thus did not go far for most of the educators (Carr & Lee, 2012; Karlsdóttir & Hreinsdóttir, 2015; Karlsdóttir et al., 2020).

## 7.20 Conclusion

At the beginning of the study, traditional methods of assessment were primarily used in the five preschools (Brooker, 2008): methods based on looking at what an individual child can do, usually according to a developmental scale and usually without having contact or social connections with other children or adults. Nevertheless, in the eyes of the educators, the most important learning domains for preschool children were social skills, independence, interacting with others, putting their views forward and considering others' views. In their minds, the children should be supported in being creative and in improving their well-being. Those perspectives align with Iceland's National Curriculum Guide for Preschools (2012), according to which assessment methods should relate to pedagogical views and methods reflected in contemporary ideas on assessment that foreground children's capabilities and learning and are perceived to take place in a social context in which children and preschool teachers engage in dialogue and find solutions together (Carr, 2001, 2014; Ministry of Education, Science and Culture 2012; Prout & James, 2015).

The findings from the study discussed here contribute to the ongoing debate about assessment in preschools and call for a focus on assessing children's competences, including their social and emotional skills, in more subjective ways (Vandenbroeck, 2020). The risk of doing so, however, is that educators may find themselves in a

situation in which they feel forced to prove their accountability: to perform objective, putatively reliable assessments instead of prioritising their own professional views, building on children's ideas and opening up to the possibility of supporting good lives for children.

In the study, educators generally seemed empowered to better appreciate children's perspectives and to support their views. The next steps for the educators might be to support children in becoming autonomous persons by paying attention to the ways in which children strive to participate in documentation practices (Biffi & Monta, 2020). Giving children voice has been hailed as not only a vital part of documentation but also as being vital for documentation's becoming a tool for children's empowerment. When children are active participants in assessment practices in their preschools, opportunities can emerge to support them as agents in their own lives. In this challenging situation, digital documentation can be empowering for children's participation, nevertheless, educators need to be even more cautious towards children becoming subject to control from adults (Knauf, 2020).

The policy proposals issued by the Organisation for Economic Co-operation and Development (OECD) (2011, 2015) have shown an increasing emphasis on objective assessment with the purpose of ensuring quality for all children. At the same time, preschool policies in some countries (e.g. Iceland and New Zealand) emphasise formative and child-friendly assessment. This might be a part of the confusing messages some educators experience. Hence, educators can find themselves having to serve many masters and some have developed preschool practice reflecting at least two opposites; the objective assessment versus the subjective assessment in a practice where the emphasis is on social and emotional experience through play and creative activities of children's interest. Carr (2001) has stated that there is no simple assessment method, and that assessment needs to be complex. There are many challenges educators as professionals in preschools have to deal with by; reflecting on their practice, weaving together their knowledge about theory and research and experience from the field, and interacting and building knowledge with children, parents and other educators.

Professionals in early education, who want to transform teaching practices; support children as agents and develop own professionalism, might keep in mind several issues that probably are familiar to them, but can be used as a reminder.

- Children, most of the time, are competent, often, more so than the adults in their lives realise; therefore, it is useful that assessment focuses on children's strengths.
- Documentation (e.g. pedagogical documentation and learning stories) can facilitate, not only for children to be agents, but also for their families to be interactive participants in the preschool. At the same time, documentation can be an encouragement for educators to develop their professionalism and build learning communities in preschools.
- Subjective assessment acknowledges early childhood teachers as professionals, capable of contributing to all levels of children's education; policy, administration and not least the everyday practice in preschools.



- When educators explore patterns appearing in children's learning processes; how children make meaning, interact with each other and sense well-being, and the subjective information can become a tool to support children as agents.
- When assessment methods in preschools are not consistent with the educator's professional views, they might focus on how the information from the assessment can be used for the benefit of children and their learning, at the same time, they might attend to and assess emotional and social factors of learning.
- Electronic device can be helpful in managing different forms of data, such as digital portfolios managing various types of data. Furthermore, technology can facilitate for children and parents to be active participants in the documentation process. Nevertheless, the use of electronic device might lead children to be subject to more control from the educators, e.g. if they are constantly asked to be reflecting on their actions at the cost of having less time and space to play. Therefore, keep on listening to children's voices.
- International policy has suggested the use of assessment methods measuring objective learning outcomes for young children. Traditional assessment of that kind is not universally accepted. Theoreticians have argued that objective assessment will leave out emotional and social learning and recommend using subjective methods to include emotional and social factors of learning, not least to be able to support children in vulnerable situation.
- Documentation is a tool that enables educators to listen to children's voices not least by reading into their different ways of expressing themselves which is especially useful with: the youngest children in preschools (even infants and toddlers), children of multicultural background and children needing extra support. Further, working towards equity of all kinds, such as supporting equality of girls and boys.

**Ethics** Each of the participating preschools generally upholds a code of ethics, including the stipulation of signed agreements from parents regarding what sort of data can be obtained about their children and how the data can be used in preschool activities. In our study, parents, head teachers and preschool teachers were introduced to the scope of the project and signed their informed consent to collaborate in the research, and the researchers from the university who planned the study assured them that all information from the collected data would remain confidential. In parallel, the master's students signed a statement confirming that all of their interactions between adults and children in the preschools would remain respectful and confidential. Throughout the research process, ethical issues were regularly discussed at meetings between master's students and university teachers in order to maintain awareness of ethics in the research. In the preparatory phase of the study and during the research process itself, ethical issues were also specifically addressed during dialogues and reflections amongst participants, both at large meetings with all participants and at smaller ones in the preschools.

## References

- Alasuutari, M., Keller, H. & Knauf, H. (2020). *Documentation in institutional contexts of early childhood. Normalisation, participation and professionalism*. Springer.
- Alvestad, T., & Sheridan, S. (2015). Preschool teachers' perspectives on planning and documentation in preschool. *Early Child Development and Care*, 185(3), 377–392.
- Aras, S., Sahin, F., Yilmaz, A., & Ulker, A. (2021). A common language among child, school and parents: The use of pedagogical documentation in the parent involvement process. *Journal of Qualitative Research in Education*, 27, 298–318. <https://doi.org/10.14689/enda.27.14>
- Arreljung, S., & Kelly-Ware, J. (2020). The risk of reification: Using 'professional risk' to understand why and how teachers choose to document (some of) children's ideas and actions. In M. Alasuutari, H. Kelle, & H. Knauf (eds.) *Documentation in Institutional Contexts of Early Childhood* (pp. 187–204). Springer.
- Berk, L. E., Mann, T., & Ogan, T. (2006). Make-believe play: Wellspring for development of self-regulation. In D. G. Singer, R. M. Golinkoff, & K. Hirash-Pasek (Eds.), *Play = Learning: How play motivates and enhances children's cognitive and social-emotional growth* (pp. 74–100). Oxford University Press.
- Biffi, E., & Montà, C. C. (2020). Documenting children in alternative care services: Transitional spaces between 'Being spoken for' and 'Speaking for oneself'. In M. Alasuutari, H. Keller, & H. Knauf (Eds.), *Documentation in institutional contexts of early childhood. Normalisation, participation and professionalism* (pp 167–183). Springer.
- Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. Sage.
- Brooker, L. (2008). *Supporting transitions in the early years*. McGraw-Hill.
- Carr, M. (2001). *Assessment in early childhood settings: Learning stories*. Paul Chapman.
- Carr, M. (2011). Young children reflecting on their learning: Teachers' conversation strategies. *Early Years*, 31(3), 257–270.
- Carr, M. (2014). Play and playfulness: Issues of assessment. In L. Brooker, M. Blaise, & S. Edwards (Eds.), *The Sage handbook of play and learning in early childhood* (pp. 264–276). Sage.
- Carr, M., & Lee, W. (2012). *Learning stories: Constructing earner identities in early education*. Sage Publications Ltd.
- Carr, M., & Lee, W. (2019a). *Learning stories in practice*. Sage.
- Carr, M. & Lee, W. (2019b). *Learning stories. Pedagogic practices and provocations*. In J. Formosinho & J. Peeters (Eds.), *Understanding pedagogic documentation in early childhood education: Revealing and reflecting on high quality learning and teaching* (pp. 4–31). Routledge.
- Carr, M., May, H., Podmore, V. N., Cubey, P., Hatherly, A., & Macartney, B. (2002). Learning and teaching stories: Action research on evaluation in early childhood in Aoteroa-New Zealand. *European Early Childhood Education Research Journal*, 10(2), 115–125.
- Dahlberg, G., Moss, P., & Pence, A. (2013). *Beyond quality in early childhood education and care: Languages of evaluation*. Routledge.
- Harms, T., Clifford, R. M., & Cryer, D. (2014). *Early childhood environment rating scale* (3rd ed. ECERS-3™). Teachers' College Press
- Einarsdóttir, B. F., & Björnsdóttir, M. S. (2020). *Rafrænar námssöguskráningar í leikskóla* [Documenting Learning Stories electronically by using Book Creator]. Netla. Veftúmarit um uppeldi og menntun [Online Journal on pedagogy and education]. School of Education, University of Iceland. <https://netla.hi.is/mat-a-nami-og-vellidan-barna-i-leikskola/>
- Einarsdóttir, J. (2013). Rannsóknir sem breytingarafl í skólalastarfi [Research for change in school practice]. In J. Einarsdóttir & B. Garðarsdóttir (Eds.), *Á sömu leið* [On the same path] (pp. 25–35). Rannung and Háskólaútgáfan, Reykjavík [Centre for Research in Early Childhood Education and University of Iceland press, Reykjavík].
- Einarsdóttir, J. (2016). Starfendarannsóknin Leikum, lærum, lifum [The action research play, learn, live]. In K. Karlsdóttir & A.M. Hreinsdóttir (Eds.), *Leikum, lærum, lifum. Námsvið leikskóla og grunnþættir menntunar* [Play, learn, live. The preschool learning areas and the fundamental pillar of education] (pp. 11–30). Reykjavík: Rannung and Háskólaútgáfan [Centre for Research in Early Childhood Education and University of Iceland Press].

- Einarsdóttir, J. (2017). Opportunities and challenges in Icelandic early childhood education. In C. Ringsmore & G. Kragh-Müller (Eds.), *Nordic social pedagogical approach to early years* (pp. 63–72). Springer.
- Einarsdóttir, J., Puroila, A.-M., Johansson, E. M., Broström, S., & Emilson, A. (2015). Democracy, caring and competence: Values perspectives in ECEC curricula in the Nordic countries. *International Journal of Early Years Education*, 23(1), 97–114. <https://doi.org/10.1080/09669760.2014.970521>
- Elfström Pettersson, K. (2020). Children’s participation in ECE documentation—Creating new stories. In M. Alasuutari, H. Keller, & H. Knauf (Eds.), *Documentation in institutional contexts of early childhood. Normalisation, participation and professionalism* (pp. 127–146). Springer.
- Formosinho, J., & Peeters, J. (2019). Introduction. In J. Formosinho & J. Peeters (Eds.), *Understanding pedagogic documentation in early childhood education: Revealing and reflecting on high quality learning and teaching*. Routledge.
- Garðarsdóttir, B. & K. Karlsdóttir (2012). Skráning námssagna: Sjóonarhorn barna [Documenting learning stories. Children’s perspectives]. In J. Einarsdóttir & B. Garðarsdóttir (Eds.), *Raddir barna* [Children’s voices] (pp. 99–119). Háskólaútgáfan & RannUng.
- Giudici, C., Rinaldi, C., & Krechevsky, M. (2001). *Making learning visible: Children as individual and group learners*. Project Zero and Reggio Children.
- Gústafsdóttir, A., & Sigurðardóttir, I. Ó. (2020). *Gagnlegast að sjá þessa hluti sem maður sér ekki venjulega “Mat á námi og vellíðan leikskólabarna af erlendum uppruna* [“Most useful to see these things that you don’t usually see”: Assessing learning and wellbeing of children with multicultural background]. *Netla. Vef tímarit um uppeldi og menntun* [Online Journal on Pedagogy and Education], School of Education, University of Iceland. <https://netla.hi.is/mat-a-nami-og-vellidan-barna-i-leikskola/>
- Hedges, H. (2010). Whose goals and interests? The interface of children’s play and teachers’ pedagogical practices. In L. Brooker & S. Edwards (Eds.), *Engaging play* (pp. 25–38). Open University Press.
- Hollingsworth, H. L., & Winter, M. K. (2013). Teacher beliefs and practices relating to development in preschool: Importance placed on social-emotional behaviours and skills. *Early Child Development and Care*, 183(12), 1758–1781. <https://doi.org/10.1080/03004430.2012.759567>
- Johansson, E., & Broström, S. (2015). Democracy, caring and competence: values perspectives in ECE curricula in the Nordic countries. *International Journal of Early Years Education*, 23(1), 97–114.
- Jóhannsdóttir, L. R. & Ólafsdóttir, S. M. (2020). “Þetta þarf að virka hratt og örugglega” Áskoranir við að þróa aðferðir sem meta nám og vellíðan barna í leikskóla [“It has to work fast and with assurance”: Challenges in implementing assessment of children’s learning and well-being in one preschool]. *Netla. Vef tímarit um uppeldi og menntun* [Online Journal on Pedagogy and Education]. School of Education, University of Iceland. <https://netla.hi.is/mat-a-nami-og-vellidan-barna-i-leikskola/>
- Kampmann, J. (2004). Societalization of childhood: New opportunities? New demands? In H. Brembeck, B. Johansson, & J. Kampmann (Eds.), *Beyond the competent child: Exploring contemporary childhoods in the Nordic welfare societies* (pp. 127–152). Roskilde University.
- Karlsdóttir, K., & Garðarsdóttir, B. (2010). Exploring children’s learning stories as an assessment method for research and practice. *Early Years*, 30(3), 255–266.
- Karlsdóttir, K., & Hreinsdóttir, A. M. (2015). Námssögur: Tæki til að meta áhuga, virkni og líðan barna í leikskóla [Learning Stories: a tool to assess children’s interests, activity and wellbeing]. *Netla – Vef tímarit um uppeldi og menntun*. [Online Journal on Pedagogy and Education]. School of Education, University of Iceland. <https://netla.hi.is/greinar/2015/ryn/008.pdf>
- Karlsdóttir, K., Ólafsdóttir, S. M., & Björnsdóttir, M. S. (2020). Mat á námi og vellíðan barna. Lærdómur af samstarfsrannsókn í fimm leikskólum [Assessing learning and well-being. Collaborative action research in five preschools]. *Netla. Vef tímarit um uppeldi og menntun* [Online Journal on Pedagogy and Education]. School of Education, University of Iceland. <https://netla.hi.is/mat-a-nami-og-vellidan-barna-i-leikskola/>

- Kemmis, S., McTaggart, R., & Nixon, R. (2014). *The action research planner*. Springer. <https://doi.org/10.1007/978-981-4560-67-2>
- Knauf, H. (2020). Super-documentation? Roads to digitalisation of documentation and their implications. In M. Alasuutari, H. Keller, & H. Knauf (Eds.), *Documentation in institutional contexts of early childhood. Normalisation, participation and professionalism* (pp. 241–255). Springer.
- Koshy, V. (2010). *Action research for improving educational practice: A step-by-step guide* (2nd ed.) Sage.
- Kuzminova, J., Garðarsdóttir, B., & Björnsdóttir, M. S. (2020). Þróun námssöguskráninga – Þátttaka foreldra og barna [Developing learning stories—parents and children’s participation. Assessing the learning taking place when children play and take part in other activities]. *Netla. Vefitímarit um uppeldi og menntun* [Online Journal on Pedagogy and Education], School of Education, University of Iceland. <https://netla.hi.is/mat-a-nami-og-vellidan-barna-i-leikskola/>
- Löfgren, H. (2016). A noisy silence about care: Swedish preschool teachers’ talk about documentation. *Early Years*, 36(1), 4–16.
- Mac Naughton, G., & Hughes, P. (2009). *Doing action research in early childhood studies: A step by step guide*. Open University Press.
- Malaguzzi, L. (1998). History, ideas, and basic philosophy: An interview with Lella Gandini. In C. Edwards (Ed.), *The hundred languages of children: The Reggio Emilia approach-advanced reflections* (2nd ed., pp. 49–97). Ablex.
- Mayall, B. (2003). *Sociologies of childhood and educational thinking*. Institute of Education.
- McNiff, J. (2017). *Action research: All you need to know*. Sage.
- Ministry of Education, Science and Culture. (2012). *Aðalanámskrá leikskóla* [National curriculum guide for preschools]. Ministry of Education, Science and Culture.
- Moss, P., Dahlberg, G., Grieshaber, S., Mantovani, S., May, H., Pence, A., et al. (2016). The organisation for economic co-operation and development’s international early learning study: Opening for debate and contestation. *Contemporary Issues in Early Childhood*, 17(3), 343–351.
- New Zealand Ministry of Education. (1996). *Te Whāriki. He Whāriki Mātauranga mō ngā Mokopuna o Aotearoa: Early childhood curriculum*. Learning Media.
- New Zealand Ministry of Education. (2017). *Te Whāriki. He Whāriki Mātauranga mō ngā Mokopuna o Aotearoa: Early childhood curriculum*. Available online <https://www.education.govt.nz/assets/Documents/Early-Childhood/Te-Whari-ki-Early-Childhood-Curriculum-ENG-Web.pdf>
- OECD. (2011). *Starting strong III: A quality toolbox for early childhood education and care*. OECD. <https://doi.org/10.1787/9789264123564-en>
- OECD. (2015). *Starting strong IV: Monitoring quality in early childhood education and care*. OECD. <https://www.oecd.org/publications/starting-strong-iv-9789264233515-en>
- OECD. (2020). *Early learning and child well-being: A study of five-year-olds in England, Estonia, and the United States*. OECD. Publishing. <https://doi.org/10.1787/3990407f-en>
- Oliveira-Formosinho, J., & de Sousa, J. (2019). Developing pedagogic documentation: Children and educators learning the narrative mode. In J. Formosinho & J. Peeters (Eds.), *Understanding pedagogic documentation in early childhood education: Revealing and reflecting on high quality learning and teaching* (pp. 32–51). Routledge.
- Peters, S. (2009). Responsive, reciprocal relationships: The heart of the Te Whāriki curriculum. In T. Papatheodorou & J. Moyles (Eds.), *Learning together in the early years: Exploring relational pedagogy* (pp. 23–32). Routledge.
- Peters, S., & Davis, K. (2011). Fostering children’s working theories: Pedagogic issues and dilemmas in New Zealand. *Early Years*, 31(1), 5–17.
- Pramling Samuelsson, I. (2010). Ska barns kunskaper testas eller deras kunnande utvecklas i förskolan? *Nordisk Barnhageforskning*, 3(3). <https://doi.org/10.7577/nbf.284>
- Prout, A. (2011). Taking a step away from modernity: Reconsidering the new sociology of childhood. *Global Studies of Childhood*, 1(1), 4–14.
- Prout, A., & James, A. (2015). A new paradigm for the sociology of childhood? Provenance, promise and problems. In A. James & A. Prout (Eds.), *Constructing and reconstructing childhood: Contemporary issues in the sociological study of childhood* (pp. 6–28). Routledge.
- Rinaldi, C. (2006). *In dialogue with Reggio Emilia: Listening, researching and learning*. Routledge.

- Rintakorpi, K. (2016). Documentation with early childhood education teachers: Pedagogical documentation as a tool for developing early childhood pedagogy and practices. *Early Years*, 36(4), 99–114. <https://doi.org/10.1080/09575146.1145628>
- Sharmahd, N. & Peeters, J. (2019). Critical reflection, identity, interaction: Italian and Belgian experiences in building democracy through pedagogical documentation. In J. Formosinho & J. Peeters (Eds.), *Understanding pedagogic documentation in early childhood education: Revealing and reflecting on high quality learning and teaching* (pp. 52–66). Routledge.
- Sigurðardóttir, I. Ó., & Einarsdóttir, J., et al. (2018). Challenges and advantages of collaborative action research in preschools. In E. Johansson (Ed.), *Values education in early childhood settings: International perspectives on early childhood education and development* (pp. 109–127). Springer.
- Steingrímsson, D. & Karlsdóttir, K. (2020). “það var eitthvað meira þarna” Mat á námi með áherslu á vellíðan barna [“There was something more in this”: Assessing children’s learning and focusing on their well-being]. *Netla. Vef tímarit um uppeldi og menntun* [Online Journal on Pedagogy and Education]. School of Education, University of Iceland. <https://netla.hi.is/mat-a-nami-og-vel-lidan-barna-i-leikskola/>
- Qvortrup, J. (2009). Childhood as a structural form. In J. Qvortrup W.A. Corsaro, & M.S. Honig (Eds.), *The Palgrave handbook of childhood studies* (pp. 21–33). Palgrave Macmillan.
- Vandenbroeck, M. (2020). Measuring the young child: On facts, figures and ideologies in early childhood. *Ethics and Education*, 15(4), 413–425.
- van Oers, B., & Duijkers, D. (2013). Teaching in a play-based curriculum: Theory, practice and evidence of developmental education for young children. *Journal of Curriculum Studies*, 45(4), 511–534.

**Kristín Karlsdóttir** is an Associate professor of Early Childhood Education at the University of Iceland. Her teaching and research touches upon preschool teacher’s reflections and professional development, children’s play and learning, children’s agency and democracy in preschools. She has been active in MultiEd, a group of teachers in the School of Education, who have explored their ideas, values and attitudes towards multicultural education, with the purpose of changing practices in university teaching and pursuing this at all levels of schooling. Lately her research has evolved around exploring children’s perspectives, e.g. during COVID-19, and in relation to gender and sexuality negotiation. She has taken part in several action research projects, involving documentation and assessment in preschool education.

**Johanna Einarsdóttir** is a Professor of Early Childhood Education at the School of Education, University of Iceland. She holds an Honorary Doctorate from the University of Oulu in Finland. She was the Dean of the School of Education 2013-2018. She has been conducting research in preschools and primary schools for years. She has been involved in several international research projects as a researcher and a consultant in her academic field and published together with international colleagues. Her areas of expertise are educational transitions, children’s perspectives and action research. She received the Distinguished Alumni Award from the College of Education at University of Illinois in 2018 for her contribution in the field of early childhood education research. Johanna Einarsdóttir is on the EECERA Board of Trustees.

**Part IV**  
**Children and Data Systems**

# Chapter 8

## Using Data Collection to Better Understand Students in Early Primary Physical Education



Cameron Van der Smee and Ben Williams

**Abstract** In physical education (PE), there has been a growing call for teachers to implement student-centred pedagogies. The use of these approaches allows a teacher to listen and respond to the needs and interests of a diverse student population in a localized context. To effectively deliver a student-centred approach in early primary PE, a teacher must develop a nuanced understanding of all their students. However, primary teachers have been observed to deliver a more traditional sport-based version of PE, which fails to address the needs and interests of all students in the class. This chapter presents insights gained from a research project focused on the embodied interactions of a cohort of year one and two children (in PE and on the playground) through the use of multiple tools of data collection. The use of a variety of methods, namely participation observation, video recording, map drawing and photo elicitation, provided a wealth of interesting data. These data provided unique insights into the needs and interests of the children, within and beyond the school. By utilizing a similar multi-method approach, teachers can gain a deeper understanding of the needs and interests of their students, which we argue will help with the planning and implementation of student-centred approaches in PE.

### 8.1 Introduction

Cameron So, why do you love riding your scooter so much?

Adele Because it makes me fit and healthy.

(Adele, photo-elicitation interview)

---

C. Van der Smee (✉)

Institute of Education, Arts and Community, Federation University Australia, Berwick, VIC, Australia

e-mail: [c.smee@federation.edu.au](mailto:c.smee@federation.edu.au)

B. Williams

School of Education and Professional Studies, Griffith University, Gold Coast, QLD, Australia

e-mail: [benjamin.williams@griffith.edu.au](mailto:benjamin.williams@griffith.edu.au)

© The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2022

C. McLachlan et al. (eds.), *Assessment and Data Systems in Early Childhood Settings*,  
Early Childhood Research and Education: An Inter-theoretical Focus 5,

[https://doi.org/10.1007/978-981-19-5959-2\\_8](https://doi.org/10.1007/978-981-19-5959-2_8)

The quote above shows the response from a student during a photo-elicitation interview about her physical activity behaviours outside of school. This interview excerpt came from the first author's Ph.D. project, which was conducted over the course of six months at a primary school in Victoria, Australia. The project examined how early-primary-age children develop their physical subjectivities (i.e. a sense of self, body and a connection with physical culture) in primary education. This portion of the interview is just one small sample of the wealth of data collected from a group of year 1/2 students over the course of six months spent at the school. Had it been a classroom teacher collecting this information from Adele, they would have been able to use it to guide their practice in a number of ways. For example, they could use it in physical education (PE) lessons to develop activities that align with Adele's interests, or use it during a health lesson as prompt to examine Adele's understanding of health, or use it within the classroom to direct Adele towards reading literature with protagonists that have similar interests. Importantly, this was just one of a variety of data collection tools utilized to gain a deep understanding of group of 100 students, just like Adele, in this project. This chapter argues that similar approaches would also help classroom teachers design and deliver authentically student-centred PE experiences to students such as those who participated in the study.

Advocacy of student-centred pedagogies in PE has been steadily growing over the last several decades (Enright & O'Sullivan, 2010; Goodyear & Dudley, 2015; Kirk, 2013; Petrie et al., 2018). This growth is partly due to the acknowledgement that traditional, teacher-centred ways of teaching do not connect with all students (Kirk, 2010), leading to many feeling alienated in and by PE. Student-centred pedagogies are not simply a new way to teach. Crucially, they challenge the conventional power relations of the classroom by listening and pedagogically responding to the needs and interests of diverse student populations in their local contexts (Enright & O'Sullivan, 2010; Oliver & Kirk, 2016). Thus, student-centred approaches allow teachers to connect with their students in deeper, more meaningful ways. Unfortunately, despite this growing advocacy and increasing awareness of the limitations of teacher-centred practices, the state of PE in many primary schools appears to be anything but rosy. As explained below, classroom teachers face multiple barriers when trying to design and delivery quality PE experiences and, as a consequence, often avoid teaching the subject entirely (Morgan & Bourke, 2008). Before considering the potential, we believe data-rich approaches offer classroom teachers in the pursuit of meaningful experience in H/PE, it is necessary to explore these barriers and challenges further.

## 8.2 Primary Physical Education

The primary years of PE are a crucial time for the development of children (Kirk, 2005; Whitehead, 2010). Researchers have highlighted the significance of primary PE in providing children the basic building blocks (Haydn-Davies, 2005) of competent and confident participation in movement and physical activity (Macdonald & Enright, 2013). One problem that has impacted primary PE is that many schools do not have



a specialist PE teacher (Kirk, 2005; Morgan & Hansen, 2008; Whipp et al., 2012)-a slippery and sometimes contentious term typically used to refer to a teacher who exclusively or predominately teaches PE. Primary schools have faced increasingly restrictive budgets and many have not been able to justify the employment of a full-time PE specialist (Whipp et al., 2012). Consequently, the responsibility for teaching PE has typically fallen to the classroom “generalist” teacher (Garrett and Wrench 2008). Research has shown that classroom teachers have faced a number of barriers in this regard, including inadequate training, low levels of knowledge and experience, time constraints, an inability to correct technique, and low self-confidence (Decorby et al., 2005; Griggs, 2007; Morgan & Bourke, 2008; Ní Chróinín et al., 2020; Whipp et al., 2012). Perhaps unsurprisingly, then, non-specialist classroom teachers have been observed to give little or no priority to PE (Farrell et al. (2004).

The impact of these barriers, where PE is delivered at all (Morgan & Bourke, 2008), is often PE lessons that resemble supervised play (Decorby et al., 2005) or the traditional, sporting version of PE (Jess et al., 2017; Ward & Griggs, 2018) in which children are exposed to a variety of sports over short periods of time (Cothran, 2001), both of which tend to be easier to implement. Alternatively, an increasing number of primary schools are taking the opportunity to outsource their PE lessons to external providers (EPs) (Stirrup, 2020; Williams & Macdonald, 2015). These external providers are often representatives from sporting organizations (particularly sport coaches) who teach PE in a way that narrowly focuses on teaching children how to play sport and perform sport-related skills (Powell, 2015). Whether taught by a classroom teacher or an EP, primary PE pedagogies tend to over-emphasize sport, fitness and fundamental movement skills (Petrie, 2011) and to adopt a ‘one-size-fits-all’ approach to students (Powell, 2015). Furthermore, this over-emphasis on sport tends to privilege the experiences of those students who have engaged in similar sporting activities outside of school, over the experiences of their peers who have not (Smee et al., 2021). This privileging then often goes on unchallenged, with the exclusive focus on sport continuing throughout primary PE and with the needs and interests of only a small group of students being actively addressed (Hastie & Casey, 2014). Yet, despite thorough and sustained criticism of this approach, it remains dominant in most schools (Jess et al., 2011) and continues to alienate and exclude a large number of students, particularly those with lower levels of both skill and tactical mastery (Hastie & Casey, 2014).

Ultimately, the focus on a traditional sporting model of PE delivered through a teacher/coach-centred pedagogical approach makes it difficult for teachers to cater for all students. This approach tends to homogenize student interests and capacities, and fails to adequately acknowledge the diversity of the student body. By contrast, student-centred approaches to PE acknowledge the essential role that children can and must play in the curriculum-making process (Walseth et al., 2018). Student-centred PE requires a teacher to work with all students ‘to determine the kinds of physical activities that they find enjoyable and meaningful’ (Powell & Fitzpatrick, 2015, p. 481), thereby allowing the teacher to enhance the interests and meet the needs of all students (Powell & Fitzpatrick, 2015). Making this shift will allow a primary teacher to account for the unique and varied experiences any new group

of students bring to class. By utilizing a range of data collection methods across two key physical activity sites—the PE class and the playground space—teachers can gain a nuanced understanding of their students and the experiences that they bring to PE. Such combinations of data collection technique and location can also help teachers avoid making simple assumptions about their students, and use this deeper understanding of the students to plan PE curricula that are responsive to the needs and interests of all.

In this chapter, the argument is made that the multiple data collection techniques used in the first author’s research project allowed him to gain a deep and nuanced understanding of the participating students. As outlined above, the aim of this project was to investigate how early primary age children (year 1/2) develop their physical subjectivities across PE and the playground (see Smee et al., 2021). To carry out this project, the first author spent six months at a primary school called Castle Rock Primary School.<sup>1</sup> The majority of time at the school was spent with the children from five composite year 1/2 classes, on the playground and in their PE classes. To examine the actions of the children a variety of ethnographic and child-centred data collection techniques were used. These four techniques, which will be explained further, were:

1. Participant observation
2. Video recording
3. Map drawing (with interviews)
4. Photo elicitation.

Understanding how children develop their physical subjectivities across these spaces required the use of multiple data collection techniques. These techniques generated four data sets that highlighted a range of information about the students across the spaces. Analysing and synthesising these data sets utilising an inductive approach (Braun & Clarke, 2019) revealed a wealth of interesting and divergent facts about the students at a level that their teachers were likely not familiar with. This chapter focuses on two students, Adele and Llewyn, and presents some of the interesting information learned about them utilizing these techniques. To present these data, a layered approach is adopted, whereby data about each child from each collection technique is presented. The chapter is approached in this way for two reasons. Firstly, it facilitates a deeper explanation of each method and the manner of their enactment. The hope is that this will provide a novel insight into how to deploy this type of data-driven approach. Secondly, it allows the reader to follow the discoveries (e.g., contradictions and complications) that emerge as the disparate data sets are synthesized and analysed. That is to say, it illustrates how each successive layer of data adds richness and complexity to understandings of these two children’s physical subjectivities, particularly in those instances of divergences between data sets (often as differences between what the children say and how they act). The result of this incorporation of multiple data sets layering is thus a more vivid and authentic portrait of students, and one that is arguably more useful to their teachers.

---

<sup>1</sup> Pseudonym.

Over the next few sections, each of the data collection techniques used are examined, and some of the findings about Llewyn and Adele presented. The use of participant observation is examined first.

### 8.3 Participant Observation

The principal data collection tool used in this project was participant observation, a method in which a researcher takes an active part in the day-to-day activities, rituals and interactions of a group of people (Dewalt and Dewalt, 2002). Participant observation provided a means to learn the explicit and tacit aspects (Dewalt and Dewalt, 2002) of the children's daily interactions in the playground and PE class. The strength of this approach is that it accounts for the inability to be a spectator looking in on the children (Pauille, 2013). In a similar study, Bowen Pauille (2013) conducted an ethnographic study at two high schools, one in Amsterdam and one in New York, where he maintained dual roles as a teacher and researcher. Similar to his study, the first author was an active participant, entirely present in the research field, rather than on the sidelines. As previously explained, the participation observation was conducted during all of the year 1/2 PE classes and during recess and lunch on the playground. This process involved taking part in unusual activities (such as Piggyback races and hut building), hanging out, interacting (Dewalt and Dewalt, 2002) and playing with the children. Underpinned by Carspecken's (1996) method of priority observation, sometimes this meant staying with one group for the duration of recess/lunch, though it more often entailed engaging with a variety of different groups. The PE observations involved walking among the children as they engaged in the activities, moving back and forth between activity stations, interacting with the children and participating when necessary. Conducting these observations (both in PE and on the playground) required staying sensitive to the activities the children engaged in, the nature of their interactions and the impact of these interactions. No writing materials were carried while conducting these observations; instead, recollections were written up as field notes immediately after each observation session. Though more formal, this collection methodology was similar to the types of observation that are integral to work of a teacher. The analysis of these field notes presented some interesting insights into Adele and Llewyn's actions in these spaces.

#### 8.3.1 *Llewyn*

During the observations, a number of interesting things were discovered about Llewyn's actions on the playground and in PE. In PE, it was observed that Llewyn had a high level of experience in the skills valued in class activities. He gained this experience through his participation in sport outside of school, including football.

As a result, he was highly skilled and quite successful in class, which was something that he often boasted about:

Llewyn, in particular, boasted to me about his football skills. He loudly announced ‘I am the best player in the class, because I play outside of school.’ He continued, ‘I am better than anyone else in the class, especially at handballing. I am better than you (he points at me) and you (he points at the teaching aide).

(Field note, PE, Class 1/2 Yellow)

During PE activities, he displayed these skills and engaged in competition to achieve success. On the playground, Llewyn was observed playing with a number of different groups, engaging in a variety of different activities. From other observations, it was clear that his interest in sport did not necessarily translate to the playground. On one occasion, Llewyn was observed building tunnels with a group of prep students; otherwise, he always played with other students in his class.

### **8.3.2 Adele**

In PE class, the observations showed that Adele possessed a number of skills that were integral for success in this space, specifically the ability to throw and catch. She had already developed competence in these skills, which at the time, was assumed to be a consequence of engaging in them at home. She performed competently in all the activities she participated in and displayed a desire to follow whatever rules were involved. On the playground, Adele spent all of her time with a group of friends from her class: Lonnie, Tiffany and Tessa. The four girls almost always played together and would spend their time talking and playing games in the jungle gym area, as shown in the following field note:

Lonnie, Tiffany, Adele, and Tessa were playing a game on the monkey bars. The game involved trying to pull down one person who was hanging from the middle of the monkey bars.

(Field note, playground)

The observations showed that Adele was very social and typically acted as the leader in this group, particularly when it came to ensuring the group played exclusively in the ‘assigned’ year 1/2 spaces.

### **8.3.3 Lessons Learned**

- Llewyn was a highly skilled and successful student in PE class. However, he did not rely on this skill on the playground, often choosing to engage in other types of activities. These observations were already starting to show some of the divergences between how Llewyn acted in PE and how he acted on the playground.

- Adele possessed a number of the skills that were integral for success in PE. On the playground, she played exclusively with her friends in the 1/2 ‘assigned’ spaces.

## 8.4 Video Recording

The use of video recording technology provides the opportunity to record naturally occurring activities as they arise in ordinary environments (Heath et al. 2017). Video research places a focus on situated performance as it occurs in daily social interactions (Erickson, 1988). As the aim of the project was to develop an understanding of the interactions between the children in PE classes and the impact of their actions on each other, video technology generated a permanent recording that could be analysed in detail at the first author’s discretion. The use of video analysis software afforded the ability to slow these interactions down, replay each one an unlimited number of times (Cowan, 2014; Heath et al. 2017) and view the interactions in a way not possible in-person (Cowan, 2014). This affordance is particularly important for educators as it allows them to see more than what they witness themselves in real time. For example, the videos showed how the aggressive actions of one student impacted the actions of the students towards whom the aggression was directed. The process of video recording followed a strict ethical procedure, whereby only those children who had provided assent and had consent from their parents were recorded. The structure of the class was conducive to the filming because the children engaged in four station activities during every lesson. As a result, the teacher was able to allocate all the students that were involved in the filming into two groups. Each activity was then filmed using a wide-angled shot, to capture how the children interacted and responded to each other (Heath & Hindmarsh, 2002), with the cameras then moving with the children between activities. The analysis of these recordings was done using Observer XT, a software tool designed to aid in the coding, management and analysis of observational data (Snell, 2011). This software allowed for a level of insight unavailable through observations alone. Again, this data provided valuable data about the needs and interests of Adele and Llewyn.

### 8.4.1 Adele

The video data showed that despite possessing a reasonable level of confidence and skill competence, Adele was not always successful in class. Specifically, her ability to engage in lessons and successfully participate in activities was often adversely affected by some of the boys in the class. This is shown in the following description of a recorded game of Piggy in the Middle in class:

Aaron starts by throwing it high to Natasha. She drops it and Adele gets it and swaps out with Aaron. Aaron, now a piggy, runs up and gets in Adele’s face, he spreads his hands and tries to block Adele’s throw. She moves the ball around, but he moves with her, trying to

block any of her throwing paths (see Fig. 8.1). Adele is not able to throw it very far, Ric catches her ball and she has to go into the middle. Aaron and Rick laugh at Adele because she lost the ball.

(Video data, PE class, 1/2 Blue)

This moment shows that despite Adele's ability and confidence, her capacity to succeed in these activities was adversely affected by Rick and Aaron. Indeed, this situation got worse for Adele as the game went on:

As piggy, Aaron immediately runs up and tries to block Adele from throwing, he reaches in and tries to knock the ball out of her hands. Rick runs in and tries to do the same thing as Aaron, jumping and smacking the ball in her hands (see Fig. 8.2). This makes it difficult for Adele to throw.

(Video data, PE class, 1/2 Blue)

Although this is an analysis of an isolated incident, it was indicative of similar behaviours by the boys, often at the expense of Adele and some of other girls that were captured in the videos.



**Fig. 8.1** Aaron blocks Adele's path



**Fig. 8.2** Aaron and Ric attack the ball in Adele’s hands

### 8.4.2 *Llewyn*

The videos showed that Llewyn was able to use his previous physical activity experience to be successful in PE activities. He engaged in these activities by embodying the sense of competition he had learned through football and was able to display the skills he had learned in other sports. For example, he displayed an ability to ‘fake’ a pass during Piggy in the middle (with a soccer ball), as shown in the following example:

Llewyn is holding the ball with his foot, and his classmate, Jenny, is in the middle. Llewyn gets ready to kick the ball. He has two options, to pass to Ted or Claudio. He aims at Ted and Jenny moves over to intercept the ball. He pretends to kick [the] ball but quickly stops and kicks to Claudio instead (see Fig. 8.3). Jenny does not predict this and instead runs over to Ted, missing the opportunity to intercept the ball. Eventually, the ball comes back to Llewyn. This time he fakes a pass to Claudio and passes it to Ted instead. Again, Jenny follows the ball the wrong way.

(Video data, PE class, 1/2Red)





**Fig. 8.3** Llewyn fakes a pass to trick Jenny

This skill was important for engaging in the activity, and was not shared by all of the members of the year 1/2 cohort. It tended to be the ‘sporty students’, like Llewyn, that were able to display this skill because it was not taught in class. For example, in the above activity, he was able to use this skill to successfully avoid spending much time at all as the piggy.

### **8.4.3** *Lessons Learned*

- Earlier observations of Adele presented her as a successful and competent student, whereas this video data showed that on numerous occasions her ability to succeed was impacted by other students. This finding did provide further insight into Adele’s character by showing how resilient she was in face of these actions from the boys.
- Llewyn’s experience in sport outside of school helped him to succeed. The ability to display skills such as a ‘fake pass’ and to embody a focus on competition meant he performed well in most activities in PE.



## 8.5 Map Drawing

Map drawing is a data collection tool that allows participants to create visual representations of their own social worlds. The use of map drawing encouraged the children to provide their own responses and interpretation by producing information through a visual representation (Thomson, 2007) designed to allow them to express themselves graphically. In this phase of the project, the children drew maps of the playground space and added their voices to the representations through interviews. To facilitate this method, map drawing sessions were conducted with all five of the year 1/2 classes during class time. For the map drawing, the students were instructed to highlight the areas they play in and to draw in the friends they regularly play with. Beyond these instructions, the children had complete freedom to draw the maps in any way they chose. To allow the students to detail their lived experiences (Enright & O'Sullivan, 2012), interviews were conducted with a group of fifty students<sup>2</sup> about their maps. As much as possible, the students were grouped into the friendship groups they had highlighted in their maps. The interviews involved a semi-structured approach. This approach required the use of some pre-scripted, guiding questions, but emphasized allowing the children's answers to guide the flow of the interview (Laurendeau & Sharara, 2008). For example, these guiding questions included:

- What spaces do you play in?
- Who are your friends that you play with on the playground?
- Are there any activities from PE that you play on the playground?

These guiding questions were used to provide a sense of structure to the interviews, but they did not dictate the way each interview unfolded. In fact, many of the most interesting discussions came from following the responses provided by the students and allowing them to speak freely. The collection of this data provided interesting insights into the playground behaviour of Llewyn and Adele.

### 8.5.1 *Llewyn*

The playground map and follow-up interview added some more context to Llewyn's time on the playground. The map (see Fig. 8.4) showed that he liked to play with a group of year 3/4 students at the back of the playground to build huts. He explained how he ended up building with the year 3/4 students in his own words:

- Cam     So, you don't play with anyone from 1/2?  
 Llewyn   Yeah, sometimes I play with them. And even now that this hut got destroyed,  
            I play over here.  
 Cam     So, you're playing with some 3/4 kids?

---

<sup>2</sup> All fifty students had provided their assent to be involved and had legal consent from their parents.



**Fig. 8.4** Llewyn's playground map

Llewyn Yeah, and now that that hut got destroyed and... because someone broke it and some other people put the sticks from there and brang [sic] it here and made a hut there now. And there's also like a, not a really hut there but it's like a, it have all ropes. It have all ropes. And then I join... because that was... I joined that, like that... I don't know what that is but a rope thingy with all the ropes. And then I saw their hut and then I wanted to join them, so I joined there instead of joining that one. And then I started playing with them.

(Llewyn, playground map interview)

This was in contrast with observations that led to the initial conclusion Llewyn mainly played with his own peers. Llewyn was questioned about this and said he either built huts with the older students or played games with some of his friends from class. To examine this and discover more about Llewyn's sporting engagement on the playground, he was explicitly asked:

Cam Do you ever play footy with the older kids there (points to the map) or soccer with the 3/4s there?

Llewyn No

Cam How come?

Llewyn Because only... because I don't really like footy and soccer, like I'm not a big fan, like I told you. And... but I do play sometimes the 3/4s early before school and footy sometimes. Not really basketball.

(Llewyn, playground map interview)

This was a particularly revealing piece of information. In PE class, Llewyn had shown a love for sport and was happy enough with the experience he had gained through sport to boast about his skills. He displayed dispositions such as competition and aggression during activities. Yet, when directly asked, he pointed out that he did not like sport very much.

### 8.5.2 *Adele*

The playground map and interview also further contextualized Adele's time on the playground. Her map of the playground clearly showed the friends she played with, which aligned with initial observations, and the spaces they liked to play in (see Fig. 8.5). Her map interview, conducted with her friend Tessa, provided a further insight into the play choices of her friendship group:

Adele We play Tiggy, we go on the monkey bars.

Tessa We play with the...

Adele Huh? We play Tiggy with the boys on the oval.

Tessa Yeah. And...

Adele We do skipping on the asphalt court. We don't do stuff on the oval. We sometimes sit here and talk to each other.

Tessa Yeah.

Cam So, you said you play tiggy sometimes, tiggy with the boys, is that all the time, or only sometimes?

Tessa Sometimes.

(Tessa & Adele, playground map interview)

This excerpt showed that, despite what was noticed in initial observations and what Adele showed with her map, Adele and her friends did occasionally play games with the boys on the playground. This was particularly interesting when considered in relation to how the boys treated them in PE classes. However, as elaborated on elsewhere (see Smee et al., 2021), this was more likely due to the fact that the actions of the boys in the recorded data were not unique, and were perhaps accepted within the sporting activities that occurred.

### 8.5.3 *Lessons Learned*

- These map data provided a very interesting insight into Llewyn's needs and interests. Based on the earlier data, it was concluded he was a typical 'sporty' student.



Fig. 8.5 Adele's map

However, this data set showed that Llewyn did not like sport very much and would choose other activities if given the option.

- For Adele, this data set provided further information on the types of activities she engaged in on the playground and where she spent her time. Specifically, despite early conclusions, Adele did occasionally play with the boys on the playground.

## 8.6 Photo Elicitation

Photo elicitation involves the process of inserting a photograph into a research interview (Harper, 2002). According to Becker (2002), photography displays social phenomena in context more appropriately than words. Hence, photo elicitation provides a visual jumping-off point for an individual to describe the true context of their everyday social world. In this project, the use of photo elicitation provided a 'more transparent representation of the life experiences of the participants' (Dodman, 2003, p. 24) involved, showing their 'real flesh and blood life' (Becker, 2002, p.11). It allowed the children to communicate and explain the physical experiences they engaged in during their lives outside school hours.

This data collection tool required a small group of children and their parents to elect to be involved in photo-taking outside school hours. The parents of twenty-five children were tasked with taking photos of their children being active over a two-week period. Each parent was given a disposable camera and a set of instructions to guide

the process. Following the photo-taking process, all the camera film was developed and follow-up photo-elicitation interviews (PEI) were conducted. Like Pope (2010), photo elicitation was used to provide the children with a voice to explore their sporting and activity experiences outside of school. The PEIs were conducted one-on-one with the students. Before the start of each interview, the twenty-five photos were spread out on the table and the children were instructed to choose the five photos they wanted to discuss. The children were encouraged to select the photos that most accurately portrayed the activities they liked to engage in outside of school. This process gave each child the ability to co-create the data by choosing the photos that best illustrated how they represented themselves. Similar to the map interviews, a set of pre-scripted guiding questions were used, but the process allowed the students to guide the flow of the interview (Laurendeau & Sharara, 2008). For example, the guiding questions included:

- What are you doing in this photo?
- How often do you participate in that (activity)?
- Why do you like engaging in that (activity)?

These questions guided the interviews and led to interesting and detailed discussions about a range of topics that helped illuminate the concrete realities of the children's lives (Enright & O'Sullivan, 2012) in ways not possible via the other school-based methods.

### 8.6.1 *Llewyn*

Llewyn's photo-elicitation interview provided nuanced context to his physical activity choices. His photos showed him engaging in a variety of physical activity pursuits (including football and soccer). At this point, these photos aligned with the initial view of Llewyn as a sporty student with a high level of sporting experience that allowed him to succeed in PE class (see Fig. 8.6). This background did not necessarily influence his activity choices on the playground though. Llewyn's interview provided insight into the influences on his choice to play sport outside of school:

Cam     So, who was the one who encouraged you to start playing football? Mum or dad, or both?

Llewyn Both.

Cam     Both.

Llewyn Yeah, all three of them.

Cam     All three of them?

Llewyn Even my brother.

(Llewyn, photo elicitation)



**Fig. 8.6** Llewyn playing football

This excerpt clearly shows that Llewyn’s family influenced him to play football, which makes sense because families often play this socializing role with sport participation (Stuij, 2015). The interview provided a deeper probe into Llewyn’s feeling about this influence:

Llewyn Only sometimes, because I’m not a big fan of football.

Cam You’re not a big fan of football?

Llewyn Yeah.

Cam So, you don’t like it very much?

Llewyn Yeah.

Cam How come?

Llewyn Because I just don’t really like sports that much.

Cam What do you mean you don’t like sports that much? Don’t you play outside school?

Llewyn Yeah.

Cam So, if you had your choice, so do you choose to play football, or your parents want you to play football?

Llewyn My parents want me.

Cam So, if they asked you, “Do you want to play football,” would you say yes or no?

Llewyn I said no the first, but then they kept on convinced me, so I just said yes.

- Cam OK, so they kept on telling you that they wanted you to play?  
 Llewyn Yeah.  
 Cam So how come you don't like football?  
 Llewyn Well, I do like it only a bit, because sometimes when I go for the mark I try to mark it, then it just twists all the way my hands back and it hurts a lot.  
 Cam Hmm, and so it hurts a lot.  
 Llewyn And sometimes it hits my foot hard.  
 Cam Yeah, yeah. So, you don't like football because you can get hurt in it?  
 Llewyn Yeah.

(Llewyn, photo-elicitation interview)

This revelation showed that Llewyn did not have the interest in sport suggested by the previously collected and reported data. In his own words, he revealed that his parents strongly encouraged him to play, even though he did not necessarily want to. These data showed Llewyn does not particularly like playing because he gets hurt, which was in sharp contrast to earlier perceptions about him.

### 8.6.2 *Adele*

The photo elicitation provided an extra layer of detail regarding Adele's relationship with physical culture outside of school. These data also contextualized some of the understanding generated through the other data collection techniques. The photo elicitation showed that Adele engaged in a number of different physical activities at home, including riding her bike (see Fig. 8.7), riding her scooter, climbing trees and roller blading (see Fig. 8.8). As shown at the start of this chapter, the photo elicitation also showed that Adele loved staying healthy and active, a state she pursued by engaging in a range of physical activities. Furthermore, the interview highlighted her engagement in physical activity was partly driven by her dad's love of physical activity:

- Cam OK. So, it sounds like dad especially loves rollerblading as well. Do mum and dad both do lots of activity and exercise?  
 Adele Yeah.  
 Cam So, what types of things does dad do for exercise?  
 Adele Dad does, so he does workouts, he does skipping, obviously rollerblading and bike riding.

(Adele, photo-elicitation interview).

This interview thus yielded a broader description of Adele. It showed she did engage in a number of activities outside of school. Unfortunately, these activities did not neatly align with what she could engage with during school hours.



**Fig. 8.7** Adele riding her bike

### **8.6.3** *Lessons Learned*

- Based on the initial observations, it was easy to classify Llewyn as a lover of sport and pigeonhole him as one of the ‘sporty boys’ in class. This interview showed that not only was he strongly encouraged to play football, he did not particularly like it very much, even though he was still playing. This finding made sense within the context of his playground choices, where, when given the chance, he chose to engage in different types of activities.
- The data generated through this interview helped us to understand Adele better. It helped to illustrate her experience in physical activity outside of school, her engagement in PE, and how these translated into her choices on the playground. More importantly, this interview afforded a richer and more detailed appreciation of who she is, inside and outside of school.





**Fig. 8.8** Adele riding her roller blades

## 8.7 Meeting the Needs of Students

The preceding sections demonstrate how the use of multiple methods and the synthesis and analysis of a variety of data can facilitate nuanced and complex understandings of students and their physical subjectivities. At first blush, this epistemological lesson might not seem altogether novel to researchers. Yet, while arguments in PE research to incorporate multiple forms of data generated by multiple methods are not new, there is limited evidence of such calls being heeded (Gorard & Makopoulou, 2012). Nevertheless, the argument made here focuses on the practices of teachers, not researchers. Specifically, the contention advanced in this chapter is that the methods and analyses illustrated above offer teachers and educators a blueprint for gaining a richer understanding of students' needs and interests and thus a means of designing and delivering more meaningful experiences in PE. As discussed earlier, a student-centred approach to teaching and a student-focused curriculum requires teachers to obtain such an understanding (Powell & Fitzpatrick, 2015). Taking this path allows an educator to start from where the students are, as opposed to making assumptions about where they are or should be. Although this chapter only includes data gained from two students, it offers unique perspectives on their needs and interests. The combination of these methods showed the behaviour and actions of Llewyn and

Adele across multiple spaces. This approach showed that the insights gained through one method were not enough to gain a fully accurate view of the complexities and nuances of these children's lives as they related to PE, playground play and physical culture beyond the school. Combining and layering this range of data collection techniques and the data they generated highlighted the convergences, divergences, complexities and nuances of the children's actions across these spaces.

The combination of data sets provided a holistic view of the two students. The earliest assumptions about Llewyn and Adele were quite superficial and rudimentary. As teachers, sticking with the assumptions from these initial observations would have allowed for the catering of some curriculum and pedagogical choices to accommodate Llewyn and Adele, but these would have been based on incomplete information. Viewed through the lens provided by multiple methods, it was apparent that Llewyn did not actually like sport very much. In fact, he only engaged with sport because of strong encouragement from his parents. If given the chance, he would choose not to play sport. Based on this initial data, a teacher might have maintained this approach and offered more sport to Llewyn, which would not actually have aligned with his needs or interests. Instead, the insights gained from the combined data sets highlighted how Llewyn should be encouraged to engage in a variety of non-sporting physical activity opportunities, which is where his real interests lie. Conversely, the combination of Adele's data showed that she loved to be active and engaged in a variety of different physical opportunities, such as roller blading, scooter riding and gymnastics. Unfortunately, these types of skills are not always valued within HPE generally (Powell, 2015) or her class specifically. Therefore, the assumption that Adele did not possess much physical experience was based only on a small sample of observations. Similar to Llewyn, this could lead to incorrect assumptions about what she needed to succeed in class. Instead, an approach should be used that taps into the physical activities that she engaged in and valued. Although not all of her playground and home pursuits would be applicable to PE class, providing similar activities would allow her to transfer her experiences and skills and would align more closely with her needs and interests. Learning about Adele and Llewyn using this range of techniques helped study their needs and interests at a deeper level and in more detail than would have been possible through observation or even through interview alone.

The next step in this process would be to use this data to pedagogically respond to their needs and interests within the PE class (Enright & O'Sullivan, 2010; Oliver & Kirk, 2016; Smee et al., 2021). As shown above, gaining a nuanced understanding of Llewyn's and Adele's interests and needs affords the opportunity to make important curricular and pedagogical choices in response. It would also facilitate an alignment with the philosophy of the Australian Curriculum: Health and physical education to 'ensure learning in health and physical education is personally relevant and meaningful for all students' (ACARA, 2012, p. 8), an important consideration given the role of that document in specifying the curriculum entitlement of all young Australians. Listening closely to students and tailoring PE experiences to more closely align with their needs and interests would be in direct contrast to the traditional model of PE so often delivered by many generalist teachers (Jess et al., 2017).

Doing so in the manner advanced in this chapter can be likened to painting a portrait of the students. One method sketches the outline; but, while appealing, it is incomplete. Further methods add colour, light, perspective, emotion, and movement, creating a fuller and detailed portrait and capturing truer and more authentic representation. Utilizing a variety of methods and data forms fosters the possibility of uncovering the unexpected about one's students, nudging one beyond one's initial impressions of those students, and offering opportunities to learn new things about them that contextualise or contrast with what one thinks one knows.

But what of those barriers presented earlier in the chapter and the much discussed gap between the PE many children encounter during primary school and the kinds of experiences recognized internationally as constituting a quality PE? What contribution might richer, more nuanced, data-informed understandings of children's physical subjectivities make to accounting for or countering such impediments? One of the most commonly reported barriers and a purportedly major 'cause' of this situation is a lack of the necessary expertise within schools or among classroom teachers in sport-related subject matter (Hardman, et al., 2014). According to this line of argument, a key facet of 'the solution' is increasing classroom teachers' sports-related knowledge and sports teaching skills. Yet the valorization of sports teaching expertise in this way may in fact be intrinsic to the very problem it is supposed to fix. Underpinning the argument presented in this chapter is the suggestion that the notion of good PE teacher as facilitator of student exploration in physical culture should replace the notion of good PE teacher as sports teaching expert. Conceptualizing the teacher's role in this way highlights a key strength that classroom teachers bring to the teaching of PE; namely knowledge of their students' needs, interests and relevant previous experiences. It also emphasizes the contribution thoughtful use of data collection strategies and systems could make to classroom teachers' work in this regard.

A key message of this chapter, then, is for early primary teachers to worry less about how much they know about sports and games, and to concern themselves more with what they know of their students' needs, interests, contexts and past experiences regarding movement and physical activity in all its forms. By adopting an approach to data collection similar to that presented in this chapter, teachers can acquire a trove of data they can deploy towards the creation of a student-centred PE. The process of collecting and interpreting data via a range of techniques should not be understood by classroom teachers as an addition to their already sizable workloads. Instead, it represents a strategic use of the considerable time early primary teachers already spend with their students on a daily basis in class and on the playground pursuing pedagogical ends. Crucially, teachers' uses of data collection techniques like those presented here do not need to be implemented in the very formal and structured way used in this doctoral study. Teachers can adapt and modify them according to their learning goals and circumstances. For example, the map drawing task used could be conducted as part of an art lesson, and the elicitation technique implemented as part of an individual or group discussion about the product. Similarly, the photo-elicitation work could be converted into a show-and-tell activity where students bring relevant photographs from home. In this way, then, teachers' everyday pedagogical

interactions with students become a rich source of insights that combine to create a detailed portrait of their students within the PE space.

To conclude, this chapter has explored the use of participant observation, video recording, map drawing and photo elicitation to gain a deep and nuanced understanding of a cohort of year one and two children (in PE and on the playground). To this end, the chapter has shown how these multiple data collection forms generated a wealth of interesting data that offered unique insights into the needs and interests of the children, within and beyond the school. It was argued that data-rich insights such as these offer classroom teachers the opportunity to listen and respond to the needs and interests of diverse student populations and their local contexts. It was also argued that obtaining an appreciation of this kind has the potential to shift teacher practices away from the dominant teacher-centred, sports-focused approaches to primary PE and towards the more student-centred approaches advocated for within the literature, reconceptualizing notions of the good teacher in the process and helping foster better PE experiences for all children.

## References

- ACARA. (2012). The shape of the Australian Curriculum: Health and Physical Education: Curriculum, retrieved on May 14th, 2021 from [https://docs.acara.edu.au/resources/Shape\\_of\\_the\\_Australian\\_Curriculum\\_Health\\_and\\_Physical\\_Education.pdf](https://docs.acara.edu.au/resources/Shape_of_the_Australian_Curriculum_Health_and_Physical_Education.pdf)
- Becker, H. (2002). Visual evidence: A seventh man, the specified generalisation and the work of the reader. *Visual Studies*, 17, 3–11.
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589–597.
- Carspecken, P. F. (1996). *Critical ethnography in educational research: A theoretical and practical guide*. Routledge.
- Cothran, D. J. (2001). Curricular change in physical education: Success stories from the front line. *Sport, Education and Society*, 6(1), 67–79.
- Cowan, K. (2014). Multimodal transcription of video: Examining interaction in early years classrooms. *Classroom Discourse*, 5(1), 6–21.
- DeCorby, K., Halas, J., Dixon, S., Wintrup, L., & Janzen, H. (2005). Classroom teachers and the challenges of delivering quality physical education. *The Journal of Educational Research*, 98, 208–220.
- DeWalt, K. M., & DeWalt, B. R. (2002). *Participant observation*. AltaMira Press.
- Dodman, D. R. (2003). Shooting in the city: An autophotographic exploration of the urban environment in Kingston, Jamaica. *Area*, 35, 293–304.
- Enright, E., & O’Sullivan, M. (2010). ‘Carving a new order of experience’ with young people in physical education: Participatory Action Research as a pedagogy of possibility. In M. O’Sullivan & A. MacPhail (Eds.), *Young people’s voices in physical education and youth sport* (pp. 175–197). Routledge.
- Enright, E., & O’Sullivan, M. (2012). “Producing different knowledge and producing knowledge differently”: Rethinking physical education research and practice through participatory visual methods. *Sport, Education and Society*, 17(1), 35–55.
- Erickson, F. (1988). Ethnographic description. In U. Ammon (Ed.), *Sociolinguistics. An international handbook of the science of language and society* (pp. 1081–1095). De Gruyter.

- Farrell, A., Thompson, S., & Napper-Owen, G. (2004). Southern California elementary physical education specialists and non-specialists: Beliefs and behaviors of the ideal purpose and actual function of elementary physical education. *Californian Journal of Health Promotion*, 2(2), 28–40.
- Garrett, R., & Wrench, A. (2008). Connections, pedagogy and alternative possibilities in primary physical education. *Sport, Education and Society*, 13(1), 39–60.
- Goodyear, V., & Dudley, D. (2015). “I’m a facilitator of learning!” Understanding what teachers and students do within student-centered physical education models. *Quest*, 67(3), 274–289.
- Gorard, S., & Makopoulou, K. (2012). Is mixed methods the natural approach to research? In K. Armour & D. Macdonald (Eds.), *Research methods in physical education and youth sport* (pp. 106–119). Routledge.
- Griggs, G. (2007). Physical Education: Primary matters, secondary importance, *International Journal of primary, elementary and early years education (Education 3–13)*, 35(1), 59–69.
- Hardman, K., Murphy, C., Routen, A., & Tones, S. (2014). *World-wide survey of school physical education: Final report 2013*. United Nations Educational, Scientific and Cultural Organisation.
- Harper, D. (2002). Talking about pictures: A case for photo elicitation. *Visual Studies*, 1(1), 13–26.
- Hastie, P. A., & Casey, A. (2014). Fidelity in models-based practice research in sport pedagogy: A guide for future investigations. *Journal of Teaching in Physical Education*, 33(3), 422–431.
- Haydn-Davies, D. (2005). How does the concept of physical literacy relate to what is what could be the practice of physical education? *The British Journal of Teaching Physical Education*, 36(3), 45–48.
- Heath, C., & Hindmarsh, J. (2002). Analysing interaction: Video, ethnography and situated conduct. In T. May (Ed.), *Qualitative Research in Action* (pp. 99–121). SAGE.
- Heath, C., Hindmarsh, J., & Luff, P. (2017). *Video in qualitative research: Analyzing social interaction in everyday life*. SAGE.
- Jess, M., Atencio, M., & Thorburn, M. (2011). Complexity theory: Supporting curriculum and pedagogy developments in Scottish physical education. *Sport, Education and Society*, 16(2), 179–199.
- Jess, M., McEvilly, N., & Carse, N. (2017). Moving primary physical education forward: start at the beginning. *Education 3–13*, 45(5), 645–657.
- Kirk, D. (2005). Physical Education, youth sport and lifelong participation: The importance of early experiences. *European Physical Education Review*, 1(3), 239–255.
- Kirk, D. (2010). *Physical Education Futures*. Routledge.
- Kirk, D. (2013). Educational value and models-based practice in physical education. *Educational Philosophy and Theory*, 45(9), 973–986.
- Laurendeau, J., & Sharara, N. (2008). “Women could be every bit as good as guys”: Reproductive and resistant agency in two “action” sports. *Journal of Sport and Social Issues*, 32(1), 24–47.
- Macdonald, D., & Enright, E. (2013). Physical literacy and the Australian health and physical education curriculum. *ICSSPE Journal of Sport Science and Physical Education*, 65, 351–359.
- Morgan, P. J., & Bourke, S. (2008). Non-specialist teachers’ confidence to teach PE: The nature and influence of personal school experiences in PE. *Physical Education and Sport Pedagogy*, 13(1), 1–29.
- Morgan, P. J., & Hansen, V. (2008). Classroom teachers’ perceptions of the impact of barriers to teaching physical education on the quality of physical education programs. *Research Quarterly for Exercise and Sport*, 79(4), 506–516.
- Ní Chróinín, D., Fletcher, T., Jess, M., & Corr, M. (2020). A major review of stakeholder perspectives on the purposes of primary physical education. *European Physical Education Review*, 26(2), 322–336.
- Oliver, K. L., & Kirk, D. (2016). Towards an activist approach to research and advocacy for girls and physical education. *Physical Education and Sport Pedagogy*, 21(3), 313–327.
- Paulle, B. (2013). *Toxic schools: High-poverty education in New York and Amsterdam*. University of Chicago Press.
- Petrie, K. (2011). An enduring issue: Who should teach physical education in New Zealand primary schools? *Journal of Physical Education New Zealand*, 44(1), 12–17.

- Petrie, K., Devcich, J., & Fitzgerald, H. (2018). Working towards inclusive physical education in a primary school: 'some days I just don't get it right.' *Physical Education and Sport Pedagogy*, 23(4), 345–357.
- Pope, C. C. (2010). Got the picture? Exploring student sport experiences. Using photography as Voice. In M. O'Sullivan, & A. MacPhail (Eds.), *Young people's voices in physical education and youth sport* (pp. 186–206). Routledge.
- Powell, D. (2015). Assembling the privatisation of physical education and the 'inexpert' teacher. *Sport, Education and Society*, 20(1), 73–88.
- Powell, D., & Fitzpatrick, K. (2015). 'Getting fit basically just means, like, nonfat': Children's lessons in fitness and fatness. *Sport, Education and Society*, 20(4), 463–484.
- Smee, C., Luguetti, C., Spaaij, R., & McDonald, B. (2021). Capturing the moment: Understanding embodied interactions in early primary physical education. *Physical Education and Sport Pedagogy*, 26(5), 517–532.
- Snell, J. (2011). Interrogating video data: Systematic quantitative analysis versus micro-ethnographic analysis. *International Journal of Social Research Methodology*, 14(3), 253–258.
- Stirrup, J. (2020). Performance pedagogy at play: Pupils perspectives on primary PE. *Sport, Education and Society*, 25(1), 14–26.
- Stuij, M. (2015). Habitus and social class: A case study on socialisation into sports and exercise. *Sport, Education and Society*, 20(6), 780–798.
- Thomson, S. (2007). Do's and don'ts: Children's experiences of the primary school playground. *Environmental Education Research*, 13(4), 487–500.
- Walseth, K., Engebretsen, B., & Elvebakk, L. (2018). Meaningful experiences in PE for all students: An activist research approach. *Physical Education and Sport Pedagogy*, 23(3), 235–249.
- Ward, G., & Griggs, G. (2018). Physical education: A memetic perspective. *European Physical Education Review*, 24(4), 400–417.
- Whipp, P. R., Hutton, H., Grove, J. R., & Jackson, B. (2012). Outsourcing physical education in primary schools: Evaluating the impact of externally provided programmes on generalist teachers. *Asia-Pacific Journal of Health, Sport and Physical Education*, 2(2), 67–77.
- Whitehead, M. (2010). *Physical literacy: Throughout the life course*. Routledge.
- Williams, B. J., & Macdonald, D. (2015). Exploring outsourcing in health, sport and physical education. *Sport, Education and Society*, 20(1), 57–72.

**Cameron Van der Smee** is a Lecturer in Health and Physical Education in the Institute of Education, Arts and Community at Federation University. He has worked in education for the last ten years. He completed his undergraduate degree in Physical Education in 2009 and then worked for five years as a classroom/PE teacher in the USA. He transitioned to graduate research by completing a master's degree in 2015. He recently finished his Ph.D and continues to use his research to inform his teaching practice and vice versa. He has been teaching at the tertiary level since 2016.

**Ben Williams** is a Lecturer in Health and Physical Education in Griffith University's School of Education and Professional Studies. He received a Ph.D. in the field of human movement studies from The University of Queensland in December 2012. Before studying for his Ph.D., he was a secondary school health and physical education teacher in Queensland. In addition to his role at Griffith University, he is the president of the Australian Council for Health, Physical Education and Recreation's Queensland Branch, a position he has held since 2015.

# Chapter 9

## Assessing Young Children's Emotional Well-Being: Enacting a Strength-Based Approach in Early Childhood Education



Sue Emmett

**Abstract** The considered assessment of young children's emotional development and learning is deemed a crucial process integrated within early childhood education settings. This chapter commences with a brief autobiographical case study to foreground the concept of the child's capability and vulnerability and then draws upon literature to reconnoitre the concepts of emotional well-being and its assessment in the early years of education. The next section of the chapter introduces a Guidance Model for Emotional Development and Learning that assists educators in understanding the various kinds of pedagogy they can draw upon when fostering children's emotional development and learning and hence, the kinds of assessment that can be employed. Further, an observational tool is presented for appraising the quality of a child's relationships with educators and the child's demeanour within the environment. This tool was developed as part of a longitudinal research project exploring relationship-focused theory and practice and findings from this study are reported. The chapter argues that a strength-based approach by educators identifies and interprets vulnerability, and works with the child and family to ameliorate the experience of vulnerability seeking to restore emotional well-being. This makes a great deal of difference to the continuous development of the agentic child.

### 9.1 Introduction

Fundamental to this chapter is the importance of assessing and fostering the emotional development and learning of children within early childhood education environments. I contend that educators require a comprehensive understanding of the meaning of emotional well-being in the early childhood years and this includes a meaningful definition of well-being, resources which nurture well-being and challenges that may destabilise it. Knowing the ways in which children express their

---

S. Emmett (✉)

Institute of Education, Arts and Community, Federation University Australia, Berwick, VIC, Australia

e-mail: [s.emmett@federation.edu.au](mailto:s.emmett@federation.edu.au)

emotional needs as well as how to identify, reflect upon and discuss these vulnerabilities enables educators to effectively support children. In other words, educators can become proficient at making professional assessment and pedagogical decisions about emotional development and learning. Models and ideas are integrated in the chapter that may assist the educators in their learning journey.

The chapter begins by presenting an autobiographical case study where more intensive support for the child is required to underscore the significance of assessing and addressing vulnerable behaviour. The see-saw model of well-being (Dodge et al., 2012) is described and used as an accessible representation to explicate well-being within the early childhood years. It clearly shows the concept of balance and how challenges within the environment can destabilise the see-saw until resources can be drawn upon to re-balance the see-saw. The model enables us to comprehend well-being as an ever-changing entity which is influenced by numerous environmental factors (Dodge et al., 2012). The concept of the Guidance Model is also presented in this chapter as a method to explain and enact the varying levels of support for emotional learning that may be required within the early childhood setting. Lastly, the Observational Descriptors and Assessment Scales, developed as part of a longitudinal study, present an example elucidating the first and third levels of the Guidance Model—*Relationship-Focused Practice and Individualised Intervention*.

## 9.2 Autobiographical Case Study

Whilst visiting the infant and toddler centres and the schools in Reggio Emilia in 2017, I described it as an *Alice in Wonderland* experience. I was intrigued and inspired by the exquisiteness of the environment, the multi-layered learning of children and the sophisticated documentation of this learning. The abilities and potential of each child exuded from the environment and I reflected upon the words from Malaguzzi: ‘Our image of the child is rich in potential, strong, powerful, competent ...’ (1997, p. 117). Yes, this vision of the self-assured child was palpable during my visit. And then, I considered how the words *strong*, *powerful* and *competent* are interpreted and operationalised in contemporary Australian early childhood education. I pondered if the notions of children’s needs and vulnerabilities have become offensive within the early childhood education community.

I returned from my exciting immersion in the Reggio Emilia schools in Italy with a not so appealing pulmonary embolism (blood clots in my lungs) after the long-distance flight to Australia. I was urgently sent to a lung specialist in a large hospital and noted for the first time the specialist’s name as I entered her surgery—*Dr Katie Willis* (pseudonym). Dr Willis was a woman in her mid-thirties and her auburn curls, green eyes and ivory skin with freckles were the same as I recalled when she was 4 years of age. She did not remember me immediately but after our conversation ensued, she began to recollect parts of her kindergarten experience and how I was one of her educators when she was so young. Dr Katie Willis’ treatment contributed



to saving my life and she quelled my fears about the clots in my body with relaxed confidence, skill, and aplomb.

I remembered Katie's experience at kindergarten very clearly, especially in those early weeks when she clung to her mother's leg so tightly and cried and screamed forcefully with a deep anxiety about separation from her mother who had also become distressed. Educators worked intensely in several ways with Katie and her mother over many weeks until her self-confidence gradually began to bud, and she started to understand that relationships with others outside the family could be trusted and even relished. Katie, very gradually, developed friendships with other children and as her self-esteem and identity emerged, she built intricate and creative block palaces with a small group of girls almost every day and skilfully hung by her legs on the monkey bar, giggling about her accomplishment. We developed a detailed individual assessment plan for Katie that documented educators' observations (including conversations with Katie's mother), interpretation, goals, approaches, and reflections. As Katie's resilience was strengthened, the individualised planning in this area was tapered back. Katie continued to benefit from the everyday sensitivity, responsiveness, and consistency of interactions between people which fostered secure relationships, a culture of emotional availability of educators and respect and belonging. Katie's emotional development went from strength to strength. I wondered what could have happened if we, as her educators, had not worked to understand her emotional needs and carefully planned in conjunction with her mother to support these needs, persisted with these plans and reflected upon changes that would enhance the plans and benefit Katie. Of course, this is only one part of Katie's life and many other experiences impacted upon her development over many years. Nevertheless, this was a significant experience for Katie, and it occurred in the critical early years of life.

Katie's needs were certainly not weaknesses but normal behavioural responses to what she perceived as stressful and overwhelming circumstances. Katie was experiencing vulnerability because her very strong feelings, enmeshed with anxiety, prevented her being an active explorer of her new environment, forming relationships with others and becoming an engaged learner. Her behaviour was, however, powerful as she emphatically and loudly expressed her displeasure. She displayed behaviour that was far from helpless and may indeed have protected her in some adverse circumstances. Her actions, as do the actions of every child at some point in time, signal that they are experiencing vulnerability. Circumstances have become overwhelming, and the child's defences are activated. The behaviour is the outward expression of these feelings of turmoil.

### 9.3 Emotional Well-Being in Early Childhood

The aim of developing healthy emotional functioning is to achieve a flourishing and thriving sense of well-being. Within the Australian context, the *Victorian Early Years Learning and Development Framework* (VEYLDF) construes well-being as

“good mental and physical health, including attachment, positive affect and self-regulation, being able to manage emotions productively and build resilience and persistence, being adaptable and confident and experiencing feelings of satisfaction and happiness” (DET 2016, p. 23). This interpretation emphasises physical health and emotional development. How well-being underpins engagement within a learning environment is also highlighted by *The Early Years Learning Framework for Australia* (EYLF) (DEEWR, 2009) and the *National Quality Framework* (NQF) (ACECQA, 2018). Well-being is an elusive concept and although many researchers have attempted to describe it (e.g. Diener et al., 1999; Kahneman, Diener & Schwarz, 1999; Keyes, 2002; Stratham and Chase 2010; Seligman, 2011) an accessible definition does not seem to have been forthcoming.

However, an illuminating definition of well-being which enables a deeper understanding of vulnerability has been proposed by Dodge et al. (2012). The definition includes a model of a see-saw that displays stability of well-being when the social, psychological and physical resources available to a person are able to balance the social, psychological and physical challenges that occur within the environment: “when individuals have more challenges than resources, the see-saw dips, along with their well-being, and vice-versa” (Dodge et al., 2012, p. 230). The model accentuates that well-being does not just happen but needs to be planned and cultivated. In other words, the individual is instrumental in making decisions and choices and has agency to increase challenges and resources as they can to maintain equilibrium. Lack of challenge also leads to stagnation for the person. The see-saw demonstrates that well-being is not static, it is not some state of bliss in which nothing changes; it is a dynamic, variable system. The authors argue that the concept “can be applied to all individuals regardless of age, culture, and gender” (p. 231). I would further contend that in relation to children, the younger the child the less capacity they have to pursue resources and the less control they have over challenges. The young child does not have as much agency as adults may possess to seek out the social, emotional nor physical capital and for this reason, children are more vulnerable to adverse environmental influences. Adults may be able to influence their well-being to some extent, but children are less likely to be able to accomplish this. Hence, the swinging of the see-saw for the child is largely outside their control of their contiguous situation and vulnerability may become an integral part of day-to-day life for many children.

### ***9.3.1 The Experience of Vulnerability***

The recent Australian Productivity Commission’s report into mental health found that one in 10 preschool aged children in Australia are exposed to multiple factors that put them at increased risk of mental illness in adulthood (Productivity Commission, 2020). These children would be deemed vulnerable and yet, as Harrison et al., (2011) affirms, vulnerability is described variably in the literature, contingent upon the lens through which it is viewed and it can also be termed at risk, hard-to-reach or disadvantaged.

Generally, children who are at risk of poorer developmental outcomes, including physical, social ability, emotional maturity, communication, and cognitive skills, are deemed as vulnerable. Socio-economic hardship and poverty can compound the experience of vulnerability. (COAG 2009a, 2009b; Early Childhood Australia, 2011; Niklas et al., 2017; Steel, 2016; Victorian Government, 2013). Children and young people are described as vulnerable in an Australian strategy report “if the capacity of parents and family to effectively care, protect and provide for their long-term development and well-being is limited” (Victoria State Government 2013, p. 4). There are many risk factors identified including alcohol or substance abuse, family violence, chronic physical illness, housing unpredictability, mental health issues, grief, or isolation, lack of support or inadequate parenting abilities. Further, contributors to vulnerability also encompass health concerns and/or disabilities experienced by children and/or family members (Victoria State Government 2013).

Not all children experiencing vulnerability will have adverse outcomes and mediating factors include the child's individual temperament and capacities, and further protective factors such as responsive relationships with others as well as the duration and frequency of the unfavourable situation (Harrison et al., 2011; Niklas et al. 2017). According to Pascoe and Brennan (2017), 22% of children who commence school in Australia are vulnerable in one or more areas of development, this increasing to 43% for children of Aboriginal and Torres Strait Islander descent (Toohey, in ECA, 2014).

There are those who argue that the term vulnerability should not be used as it labels a child or family as inadequate, weak, or passive and this is prejudicial (Brown 2012; Victorian Council of Social Services 2015). The label focuses on the person being at risk and requiring safeguarding (Victorian Council of Social Services 2015). This chapter, however, concurs with Arabena (2017) who contends that an individual who experiences vulnerability at one phase of life does not classify them as being a vulnerable person throughout life. Further, this chapter argues that all children experience challenges to their emotional well-being at times and the ways in which these are recognised and mitigated by the supportive factors within the environment determines the extent of the child's vulnerability. Vulnerability that becomes entrenched will work against the child's emotional well-being, including their competence and agency.

### ***9.3.2 Secure Attachments***

Therefore, if the resources available to protect the child are not readily forthcoming or are limited and trauma is experienced and protracted, then children's development and learning may be negatively affected because of the influence of toxic stress (Antcliff et al., 2011; Beyond Blue, 2017; Child Family Community Australia and CFCA and Australian Institute of Family Studies, 2015; Green et al., 2017; McLean, 2016; Perry, 2004; Shanker, 2018). Toxic stress is defined by the Centre on the Developing Child (2020) as a response that occurs when a child experiences strong,

frequent, and/or prolonged adversity, and the accumulative effect of this stress can be detrimental to the child's long-term physical and mental health. In contrast, the child who experiences adversity and recovers from this with the buffering effects of supportive relationships learns to be more resilient (Australian Child and Adolescent Trauma Loss and Grief Network, 2016; Beyond Blue Ltd., 2017; Capire, 2016; Victorian Auditor General's Report, 2015). Children who acquire the capacity to adapt in a positive way to adversity have developed "positive expectations of the social world, and of their self-concepts as potent agents of change within that world" (Yates et al., 2003, p. 254), and this occurs as the result of an emotionally nurturing environment. Resilience, characterised by a strong sense of self-worth and self-competence, is gradually developed over time.

A primary basis for resilience is the child's access to sensitive, responsive, and trustworthy adult relationships (Rolfe, 2004). The infant's and child's secure attachment to caregivers can be viewed as a significant protective factor that supports emotional well-being and healthy personality development as well as social adjustment and cognitive acuity (Ainsworth & Bowlby, 1991). Bowlby (1969/1982) recognises that for an infant of eighteen months to have only one figure of attachment is "quite exceptional" (p. 304). He posits that additional attachments in the child's life are not detrimental to the child and that these attachments often occur as a hierarchy and indeed strengthen the attachment relationship with the primary caregiver (1969/1982). Howes (1999) proposes three criteria for the identification of attachment figures other than the primary caregiver: "provision of physical and emotional care; continuity and consistency in a child's life; and emotional investment in the child" (p. 673). These criteria provide a useful point of reference for early childhood educators and other figures within a child's social networks. Fathers, grandparents, regular childcare providers and teachers are likely to meet these criteria (Howes, 1999, p. 674). It may well be that the infant's preferred attachment figure is not the primary caregiver (Goldberg, 2000). Children with secure attachment patterns display an ability to balance healthy relationships with their needs for both attachment and exploration. Those children who have been encouraged to tackle problems in atmosphere of support and reward from a secure attachment figure are more likely to be motivated to attempt difficult problems and to work towards success (Bartholomew, 1990). Educators who afford children strong, supportive and responsive adult-child relationships have the potential to foster the process of resilience.

### ***9.3.3 Internal Working Models***

Children also develop an Internal Working Model and this establishes their sense of self-worth and their construction of future relationships (Evans et al., 2014; Hayes et al. 2017). According to attachment theory, the child's past experiences with caregivers are aggregated into representational systems. The representational model that develops impacts upon three aspects of the way the child perceives the world. These are: the way the child perceives events; the way the child anticipates the future; and

how the child plans for the future (Bowlby, 1973). Bowlby states that “in the working model of the world that anyone builds, a key feature is his notion of who his [sic] attachment figures are, where they may be found and how they may be expected to respond” (1973, p. 208)). Furthermore, Bowlby posits that an individual child is likely to form unique working models of their attachment relationship with different caregivers and thus form a different view of themselves in relation to each caregiver. Bowlby does, however, postulate a sensitive period from birth until the age of five, progressing but decreasing in importance until adolescence after which the working model is likely to continue.

### ***9.3.4 Relationship-Focused Practice***

Furthermore, attachment relationships significantly underpin the development of emotional regulation (Cassidy, 1994; Sroufe, 1979, 1996). When children learn to manage their emotions, emotional arousal does not become so overwhelming. When children can deal with strong emotions, they are able to function more effectively on a day-to-day basis and can experience positive emotions more frequently.

Lower levels of anxiety, depression, and burnout are associated with those who have a more secure style of attachment (Mickelson et al., 1997; Pines, 2004; Priel & Shamai, 1995; Simmons et al., 2009). Moreover, those who are securely attached are more altruistic and responsive to the needs of others, displaying emotional intelligence and well-developed social skills (Kafetsios, 2004; Mikulincer, 1998). The infant's and child's secure attachment to a caregiver can be viewed as a significant protective factor that supports emotional well-being and healthy personality development as well as social adjustment. Attachment theory is the predominant theoretical construct when understanding and fostering children's emotional well-being and development. The theory has vital implications for operationalisation of attachment-focused practice in early childhood education setting. Regular opportunities for these very close interactions between each individual child and the educator are indispensable in group education situations. It may well be most unrealistic to expect that educators will develop with every child in a setting the same kind of secure attachment relationship that may be possible between an educator and a child in a home-based setting. Nonetheless, this in no way detracts from the importance of educators operationalising attachment-focused practice so that each child's emotional security and well-being is promoted (Emmett, 2011). Educators can be encouraged to develop responsive, sensitive, and consistent relationships with young children which could in turn give the child with previous insecure attachment relationships an opportunity to form an alternative working model (Emmett, 2011). Further, educators need an understanding of the ways children signal their attachment needs at different stages of development. Securely attached children will seek out responsive relationships, whilst children with less secure or disorganised attachment styles may display anxiety, confusion, hesitation, or fear when approaching relationships (Ainsworth & Bowlby, 1991).

### 9.3.5 *Emotional Availability*

The idea of Emotional Availability (EA) is important to introduce at this point. The construct of emotional availability is based heavily upon the work of Bowlby, but also contains ideas originating from Emde (1980), as well as Mahler, Pine and Bergman (1975) amongst others. EA offers a framework to significantly assist in “unpacking” the principles of attachment theory and identifying the quality communications that are brought to the relationship by both the adult and the child. Easterbrooks and Biringen (2000) further affirm, “The construct of emotional availability is well recognised as a central tenet, perhaps the connective tissue, of healthy socio-emotional development” (p. 123). The child’s behaviour within the interaction with the caregiver is just as important as the caregiver’s behaviour when the dyadic interaction is gauged; the emotional connection of the child to the adult is a central tenet in EA (Easterbrooks and Biringen, 2000).

Drawing on this strong theoretical basis, Biringen et al., (1990, 1993, 1998) developed the Emotional Availability Scales which employ an observational framework to appraise the interactions between the caregiver and the child. Features of caregiver and child interactions are observed in relation to the description of these components contained within the Scales. Separate versions of the Scales have also been created for infancy/early childhood and for middle childhood. According to Biringen (2000), the EA system uses observation to examine the range of behaviours that occur every day and not just those that are related to stressful situations. EA is a concept that can be operationalised by educators within the early childhood education setting.

## 9.4 *Assessing Emotional Well-Being in Early Childhood*

The recent Productivity Commission’s findings into Mental Health in Australia recommended that early childhood services for preschool children and their families should have the capacity to support and enhance social and emotional development and identified that there are limited proposals targeted at these early years (Productivity Commission, 2020). Assessment provides the tools for educators to identify and interpret children’s emotional development and learning. It enables the educator to then intervene and to work to restore emotional well-being and prevent unhealthy patterns becoming engrained. Early childhood educators are very well-situated to intervene consistently when children are experiencing vulnerability, but they may not have the skill and knowledge to do so (Roberts, 2017). Molla and Nolan, (2018) investigated the professional functioning of early childhood educators, and state that educators did not acknowledge the importance of assisting children experiencing vulnerability.

Identifying, comprehending, and teaching emotional skills and knowledge is subtle and multifaceted and theoretical concepts must be interpreted so they can be translated into practice (Sims, 2010; Temple & Emmett, 2013). Educators state

that they lack time for this comprehensive deliberation and do not have sufficient knowledge to systematically support children in emotional learning and development (Temple & Emmett, 2013).

There is, however, another factor that warrants consideration; the anxiety that may be experienced by educators in identifying children's needs because of the possible stigma attached to the perception of weakness or vulnerability of the child. This may be linked to their image of the strong and competent child. There may also be some fear of not knowing how to work with the child and/or family experiencing vulnerability. Further, educators may not know how to intervene in the early stages to prevent emotional difficulties compounding. Literature does underscore that early childhood educators require additional training and support to strengthen their understanding of emotional development including attachment theory, the effects of trauma and relationship-focused practice (Fordham, 2015; Fordham & Kennedy, 2017; O'Connor et al., 2017; Roberts, 2017; Sheridan et al., 2009; Woolf, 2013).

The next section of this chapter presents a model, The Guidance Model, representing varying levels of support when appraising and fostering children's emotional development and learning. Following this, I present an overview of a larger longitudinal study entitled: Preparing pre-service educators for attachment-focused practice (Emmett, 2011). I will contextualise and describe the Observational Descriptors and Assessment Scales that I developed as part of this research. This instrument assesses the quality of children's relationships with educators, children's demeanours within the environment as well as the balance between children's proximity seeking to the educator and exploratory behaviour. The findings from this section of the research will be depicted.

### **Guiding Emotional Development and Learning in Early Childhood Education Settings**

Fundamental to the assessment learning journey for educators is the capacity to recognise children's emotional development and learning and identify the ways in which different children can be supported. The following model can assist educators in understanding the suite of pedagogy they can draw upon when guiding children and hence the kinds of assessment that can be employed. Figure 9.1 portrays this Guidance Model.

The following brief descriptors will exemplify the three levels of the Guidance Model.

#### **Relationship-focused Environment: Level One**

The environment that is created communicates with the people within this setting. The sensitivity, responsiveness, and consistency of interactions between people can foster secure attachment relationships, climate of emotional availability, respect and belonging. The organisation of space, time and materials and equipment in this environment convey messages that influence thinking, feelings, as well as communication and relationship building. This is the keystone of the model and the pedagogy incorporated is fundamental to the establishment of healthy emotional development and learning for all children. Educators can assess the quality of relationships and

**Fig. 9.1** Guidance Model for Emotional Development and Learning



emotional availability within this environment and can use this information to make modifications to their interactions and the environment.

**Intentional Teaching: Level Two**

It is fundamental that educators are adept at employing a suite of pedagogies that enable children’s healthy emotional capability. This level of the model addresses this and emphasises the considered ways in which educators teach emotional knowledge and skills. This teaching may be during day-to-day interactions with the child or in group teaching sessions. Specific teaching techniques may include modelling, demonstrating, reinforcing, scaffolding, and explaining. Assessment techniques should reflect the progress of child’s emotional competence because of this teaching.



### **Individualised Support: Level Three**

This level of the model provides additional support from educators when the first two levels of the model are not sufficient to effectively enable the child's emotional development and learning. More intensive support will encompass extra, explicit assessment and individualised, thorough planning that is likely to involve collaboration with families and may include auxiliary professionals as part of the multidisciplinary support network. The case study presented at the beginning of this chapter, outlining Katie's emotional development and learning, is an example of this concept of an individually focused intervention that is required to support some children at certain times. The Illustration from Research presented next in this chapter, showcases Observational Descriptors and Assessment Scales that can be used to assess for an individualised intervention.

## **9.5 An Illustration from Research**

A longitudinal, mixed methods study entitled: *Preparing pre-service educators for attachment-focused practice*, followed the professional journeys, over three-and-a-half-years, of 15 pre-service early childhood educators (Emmett, 2011). These pre-service educators participated in a new attachment-focused pre-service education theory and practice programme in their final year of study at university. I developed the programme to enable students to learn about and experience attachment theory and practice in new ways, the programme not only explored attachment concepts and relationship issues but facilitated participant reflection upon their work with children and their own attachment history in a supportive, collaborative environment. Data was collected at three-time intervals—immediately before the education programme (Phase One—pre-education), immediately after the programme (Phase Two—post-education), and after 30 months of professional employment (Phase Two—practitioner), using a variety of methods including semi-structured interviews, naturalistic observation, personal narrative journals and questionnaires.

After the first phase of the research, students graduated from university and entered the early childhood education field as qualified educators. The two research questions for Phase 2 of the study (during the first year of educator's employment in an early childhood context), asked: *To what degree is pre-service understanding of attachment theory and practice sustained and translated into practice in the early childhood education workplace* and *What factors impact upon the sustainability of attachment-focused practice?* I developed the Observational Descriptors and Assessment Scales to gauge the quality of educators' relationships with children and children's responsivity towards educators.

### ***9.5.1 Development of the Observational Descriptors and Assessment Scales***

To answer the two research questions stated above, I had to decide upon the most effective way of capturing the information required regarding the relationship-focused practices that were occurring within the early childhood settings. Even with enough time and minimal distractions, an observer cannot perceive and record everything that is occurring in a particular situation. Perceptual overload can occur. As Martin and Bateson (2007) note, “It simply is not possible to record everything that happens, because any stream of behaviour could, in principle, be described in an enormous number of different ways” (p. 26). Therefore, Observational Descriptors and Assessment Scales with clearly defined descriptors were developed so that the researcher could readily focus on particular behaviours. The Observational Descriptors and Assessment Scales were not used in situ within the early childhood education environment but were completed later for each setting, drawing upon the analysis and evaluations of anecdotal and running records. It was resolved that for the purposes of this study, quality data could be gathered by employing the use of a five-point Likert Observational Descriptors and Assessment Scales, where the degree of intensity of practices and behaviours could be assessed by the researcher after observations had been documented, and a judgement could be made about an appropriate rating.

The observable behaviours that were incorporated in the Observational Descriptors and Assessment Scales were developed after an in-depth search of the literature, and included ideas pertaining to emotional availability from Biringen et al. (1990, 1993, 1998) and Marvin et al. (2002). This concept of emotional availability has been described earlier in this chapter under the section Emotional Well-being in Early Childhood. Further, three video recordings of children’s (babies to three years of age) interactions with educators in three different early childhood education settings were viewed and educator and child-attachment-focused practices and behaviours were ascertained and documented. This documentation augmented the content of the Observational Descriptors and Assessment Scales. The actual Observational Descriptors and Assessment Scales, utilising a Likert model are not represented in this chapter, however, Tables 9.1 and 9.2 display a description of each scale. These Observational Descriptors and Assessment Scales were developed for children under three years of age. The Scales enable the educator to assess the quality of a child’s and educator’s interactions with one another. The critical nature of the quality of these relationships has been elucidated earlier in this chapter.

### ***9.5.2 Research Findings***

Research participants Lucy and Felicity (pseudonyms) were observed as case study participants for phase 2 of the research. I directly observed these educators within the naturalistic context of their long day childcare centre workplaces for two-time

**Table 9.1** Observation descriptor definitions for the attachment-focused practice and behaviour: system of categorisation for naturalistic observations for educator**1. Responsiveness of educator to the child**

**Definition:** The degree to which the educator's behaviour demonstrates consistent and authentic responsiveness towards the child. This scale measures the extent to which the educator is alert to the child's behaviour and reliably addresses the child's needs quickly with interest and openness

**2. Educator's ability to interpret child's signals**

**Definition:** The degree to which the educator's behaviour demonstrates that they are in-tune with the child in terms of the child's signals, cues, interests, and affective state, and acts sensitively upon this information

**3. Educator builds and sustains warm, affectionate relationship with child**

**Definition:** The degree to which the educator expresses positive affect towards the child and demonstrates unconditional acceptance of the child. This affection and approval can be expressed both verbally and non-verbally and can be measured in terms of consistency and strength of expression

**4. Educator balances the child's freedom to explore with safe supports**

**Definition:** The degree to which the educator supports both the child's exploratory behaviour and need for re-fuelling including protection and comfort. This process involves the ability of the educator to repair a disruption to this smooth interaction so that attunement is re-established

**5. Educator displays a relaxed, calm, and flexible demeanour that is in-tune with the child's pace and rhythms**

**Definition:** The degree to which the educator is able to maintain a calm, respectful, and unobtrusive manner in interactions with the child

**6. Educator communicates messages to co-workers that clearly convey the importance of sensitive, responsive, and consistent caregiving practices and appropriate strategies to implement this**

**Definition:** The degree to which the educator sends verbal and non-verbal messages to co-workers to support their ability to translate attachment theory into their practical day-to-day work with children

(Emmett, 2011)

**Table 9.2** Observation descriptor definitions for the attachment-focused practice: system of categorisation for naturalistic observations for child**1. Responsiveness of child to professional caregiver**

**Definition:** The degree to which children display through verbal and non-verbal behaviour that they engage positively with the educator. The regularity and quality of both the children's and educator's initiations are assessed

**2. Children use adult as secure base and explores environment**

**Definition:** The degree to which children seek proximity or a safe haven with educator and also display age-appropriate exploratory behaviour, distancing themselves from the educator. This scale assesses the balance children display between these two behaviours

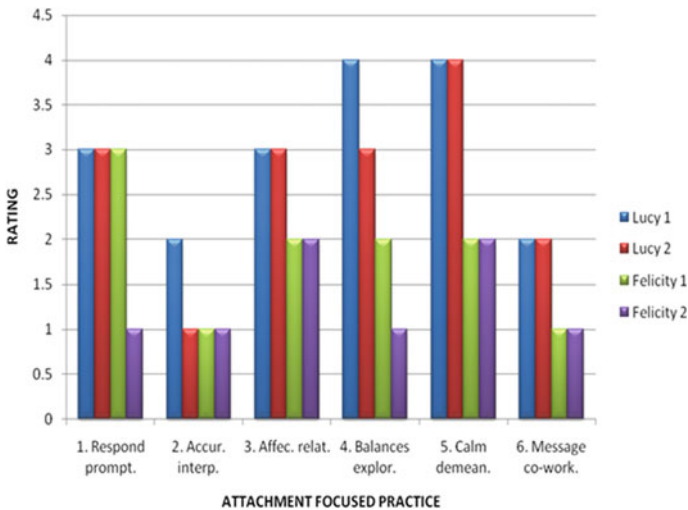
**3. Children display contented and relaxed demeanour**

**Definition:** The degree to which children express positive affect generally as opposed to fleetingly. Children display through verbal and non-verbal communication that they are at ease in the environment

(Emmett, 2011)

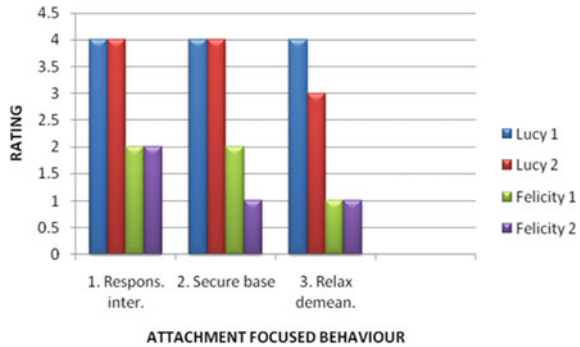
intervals of four hours each, with a period of one week to twelve days between observations for each educator. Observation of the *natural flow* of behaviour in the real-life infant and toddler settings offered insight through the utilisation of the Observational Assessment Scales. I was aware that two observations of four hours for each educator still only provided a snapshot of attachment-focused practices and behaviours. Nevertheless, the observations afforded a reasonable indication of the quality of interactions occurring between educator and children. As well, two–four hour periods were substantial time durations, and it is hard for those being observed to continue to engage in behaviour that may in some way be a façade that conceals *typical* behaviour and practice. Figures 9.2 and 9.3 show findings for Lucy and Felicity at two observation time intervals.

Findings indicate that for the Attachment-focused Practice and Behaviour: System of Categorisation for the Naturalistic Observations for the Educator, Lucy scored a 3 or above on the Likert scale eight times out of a possible twelve, during both observation sessions, indicating a moderate to high score regarding responsiveness, sustaining an affectionate relationship, balancing exploration, and a relaxed and flexible demeanour. Lucy scored a 2, indicating a low score, for interpretation of signals during the first observation session, and for communication with co-workers about attachment practice across both observation sessions. During the second observation session Lucy scored 1, indicating a very low rating for interpretation of signals. Generally, then, Lucy was assigned a moderate rating in terms of the attachment-focused practices for the educator that were displayed during both observation sessions. Regarding the Attachment-focused Practice and Behaviour: System of Categorisation for the Naturalistic Observations for the Child, Lucy



**Fig. 9.2** Findings for Lucy and Felicity at two observation time intervals using the attachment-focused practice and behaviour: system of categorisation for the naturalistic observations for educator (Emmett, 2011)

**Fig. 9.3** Findings for Lucy and Felicity at two observation time intervals using the attachment-focused practice and behaviour: system of categorisation for the naturalistic observations for child (Emmett, 2011)



scored a 4 on all accounts except one indicating a high score for responsiveness of child to educator, children use adult as secure base and explores environment, and children display relaxed demeanour. She was allocated a score of 3, signifying a moderate score, for relaxed and flexible demeanour during the second observation period. Therefore, during both observation sessions children were demonstrating the attachment-focused behaviour being observed to a high degree.

In terms of the Attachment-focused Practice and Behaviour: System of Categorisation for the Naturalistic Observations for the Educator, Felicity only scored above a 2 on the Likert scale once during both observation sessions, indicating a low score regarding responsiveness, interpretation of signals, sustaining an affectionate relationship, balancing exploration, a relaxed and flexible demeanour, and communication with co-workers about attachment practice. In one instance she scored a 3 or moderate rating, and this was for responsiveness during the first observation session. She scored ratings of 1, signifying very low, on six occasions for the six attachment-focused practices during both observation sessions. This very low rating indicated that she was only very minimally, if at all, demonstrating the attachment-focused practice being observed. Overall, Felicity was assigned a rating of low to very low in terms of the attachment-focused practices for the educator that were displayed. Regarding the Attachment-focused Practice and Behaviour: System of Categorisation for the Naturalistic Observations for the Child, she did not score above a 2, indicating a low score for responsiveness of child to educator, children use adult as secure base and explores environment, and children display relaxed demeanour. She scored a 1, indicating a very low rating, for the three attachment-focused practices three times during both observation sessions and children were therefore only very minimally, if at all, demonstrating the attachment-focused behaviour being observed.

The naturalistic observation data for Felicity indicates that the increased awareness and understanding of attachment-focused theory and practice she was able to articulate at the post-education time interval was not operationalised in the workplace as a practitioner 30 months later. Lucy, however, was able to retain and enact in her workplace the expanded insights she had gained from the education programme after a period of 30 months. This finding has implications for the ways in which learnings about emotional development is sustained when students graduate from education

courses and begin work with the new qualification in an early childhood education context. Although it is beyond the scope of this chapter to explore in depth, it is important to note that there are also Australian programmes which provide early childhood educators with effective tools in the forms of programmes which support the operationalisation of emotional learning on a day-to-day basis within early childhood education settings.

The *Attachment Matters Project-From Relationships to Learning at Preschool* presents an example of an Australian intervention programme, built around relationship-focused principles and the emotional availability constructs (Swan & Dolby, 2003). The intervention model developed in *The Attachment Matters project* is also employed in The Partnerships in Early Childhood (PIEC) project. The aim of this relationship-focused intervention is to “improve the quality of education and care provided, and to improve relationships between vulnerable children and their caregivers” (Valentine et al., 2009, p.196). A more recent Australian example is The *COPE-Resilience Programme* (COPE-R) which has been developed as a social and emotional programme teaching young children, through a series of activities, empathy and respectful behaviour as well as open communication and emotional understanding (Deans et al., 2017). As well, *Think Equal*, is a newly created early childhood education programme that was designed utilising models from social development theory and from neuropsychology, to integrate both social and emotional learnings for more holistic learning outcomes (Think Equal n.d.). *Think Equal* was evaluated in the Australian context in 2019.

## 9.6 Embracing Vulnerability—A Strength-Based Approach

The ideas presented in this chapter promote the standpoint that emotional development and learning and the vulnerabilities that the child may express can be viewed not through the lens of deficit, but through a strength-based lens. Fundamental to this is understanding that strength and vulnerability are all parts of the child and either may come to the forefront depending upon resources or challenges within the environment. To be strong and competent a child must at times experience adversity and feel vulnerability and, to develop resilience a child must be offered support to ameliorate this adversity. Hence, contrary to what may be considered appropriate, to enact a strength-based approach, educators can identify and understand vulnerability, and have a capacity to develop and enact strategies to support the child; these are all parts of developing pedagogy of which assessment is a vital component. Assessment enables educators to identify the needs of the child or metaphorically to acknowledge that the see-saw is dipping, and challenges are becoming overwhelming; the child’s emotional well-being is out of balance (Dodge, et al., 2012). Once this is comprehended, approaches can be enacted to prevent the child’s vulnerability becoming entrenched. The Guidance Model provides an approach that is inclusive of all children, including those requiring more intensive support. The Observational Descriptors and Assessment Scales show an example explicating the

first and third levels of the Guidance Model—Relationship-focused Practice and Individualised Intervention.

A deficit discourse labels, judges, or ignores the child's expressions of vulnerability. Further, this deficit approach does not embrace the ways in which an environment that is centred around developing responsive relationships, emotional attunement, and expression of feelings fosters the development of healthy emotional learning and development. A strength-based discourse identifies, interprets, and works with the child and family to ameliorate the experience of vulnerability and work to restore emotional well-being. A strength-based approach by educators offers early intervention for some children which may make a great deal of difference to future trajectories, to the continuous development of the strong, agentic, and powerful child. Without this, some children will not have the opportunity to develop crucial resilience that will carry them more successfully through life.

## References

- Ainsworth, M. D. S., & Bowlby, J. (1991). An ethological approach to personality development. *American Psychologist*, *46*(4), 333–341.
- Arabena, K. (2017). Keynote address. Paper presented at the First 1000 Days Symposium, Moe, Victoria.
- Antcliff, G., Daniel, B., Burgess, C., & Sale, A. (2011). *Resilience practice framework*. The Benevolent Society.
- Australian Child and Adolescent Trauma Loss and Grief Network. (2016). *Stepping up for kids: Understanding and supporting children who have experienced family and domestic violence*. Commonwealth of Australia.
- Australian Children's Education and Care Quality Authority [ACECQA]. (2018). Guide to the National Quality Framework. Retrieved <http://aceqa.gov.au/>
- Bartholomew, K. (1990). Avoidance of intimacy: An attachment perspective. *Personal Relationships*, *7*(2), 147–178.
- Beyond Blue Ltd. (2017). *Building resilience in children aged 0–12: A practice guide*. Author.
- Biringen, Z. (2000). Emotional availability: Conceptualization and research findings. *American Journal of Orthopsychiatry*, *70*(1), 104–114.
- Biringen, Z., Robinson, J., & Emde, R. N. (1990). *The emotional availability scales* (1st ed.). Colorado State University.
- Biringen, Z., Robinson, J., & Emde, R. N. (1993). *Emotional availability scales* (2nd ed.). Colorado State University.
- Biringen, Z., Robinson, J., & Emde, R. N. (1998). *Emotional availability scales* (3rd ed.). Colorado State University.
- Bowlby, J. (1973). *Attachment and loss: Separation, anxiety and anger*. (Vol. 2). Basic Books.
- Bowlby, J. (1969/1982). *Attachment and loss: Attachment*. (Vol. 1). (2nd ed.). Basic Books.
- Brown, K. (2012). Re-moralising 'vulnerability'. *People, Place & Policy Online*, *6*(1), 41–53. <https://doi.org/10.3351/ppp.0006.0001.0005>
- Capire. (2016). *Stakeholder and community engagement key findings report: The Education State, Early Childhood*. Capire Consulting Group.
- Cassidy, J. (1994). Emotion regulation: Influences of attachment relationships. In N. Fox (Ed.), *The development of emotion regulation. Monographs for the Society for Research in Child Development*, *59*, 228–249.



- Centre on Developing Child. Harvard University. (2020) Toxic Stress. Retrieved <https://developingchild.harvard.edu/science/key-concepts/toxic-stress/>
- Child Family Community Australia and Child Family Community Australia and Australian Institute of Family Studies. (2015). *Children's exposure to domestic and family violence: Key issues and responses*. Australian Institute of Family Studies.
- Council of Australian Governments (2009a). *Investing in the Early Years—A National Early Childhood Development Strategy*. Commonwealth of Australia. Retrieved from [https://www.startingblocks.gov.au/media/1104/national\\_ecd\\_strategy.pdf](https://www.startingblocks.gov.au/media/1104/national_ecd_strategy.pdf)
- Council of Australian Governments (2009b). *Regulation impact statement for early childhood education and care quality reforms*. COAG Decision RIS, December, 2009b. Retrieved [https://www.cabinet.qld.gov.au/documents/2009b/nov/national%20quality%20agenda%20for%20early%20childhood%20ed%20and%20care/Attachments/ris\\_early\\_childhood\\_education\\_care\\_quality\\_reforms.pdf](https://www.cabinet.qld.gov.au/documents/2009b/nov/national%20quality%20agenda%20for%20early%20childhood%20ed%20and%20care/Attachments/ris_early_childhood_education_care_quality_reforms.pdf)
- Deans, J., Klarin, S., Liang, R., & Frydenberg, E. (2017). All children have the best start in life to create a better future for themselves and for the nation. *Australasian Journal of Early Childhood*, 42(4), 78–86. <https://doi.org/10.23965/AJEC.42.4.09>
- Department of Education Employment and Workplace Relations (DEEWR). (2009). *The early years learning framework for Australia*. Commonwealth of Australia.
- Department of Education and Training (DET). (2016). *Victorian early years learning and development framework*. Department of Education and Training.
- Diener, E., Suh, M., Lucas, E., & Smith, H. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125(2), 276–302. <https://doi.org/10.1023/A:1006859511756>
- Dodge, R., Daly, A., Huyton, J., & Sanders, L. (2012). The challenge of defining wellbeing. *International Journal of Wellbeing*, 2(3), 222–235. <https://doi.org/10.5502/ijw.v2i3.4>
- Early Childhood Australia. (2011, April 11–15). *Early Childhood Education and Care in Australia: A discussion paper—prepared for the European Union-Australia Policy Dialogue*. Commonwealth of Australia.
- Early Childhood Australia (2014, November 6). *Early childhood academics and experts reject Centre for Independent Studies report* [Media release].
- Easterbrooks, M. A., & Biringen, Z. (2000). Guest editors' introduction to the special issue: Mapping the terrain of emotional availability and attachment. *Attachment and Human Development*, 2(2), 123–129.
- Ernde, R. N. (1980). Emotional availability: A reciprocal reward system for infants and parents with implications for prevention of psychosocial disorders. In P. M. Taylor (Ed.), *Parent–infant relationships* (pp. 87–115). Grune and Stratton.
- Emmett, S. (2011). *Preparing educators as young child's attachment partners: A longitudinal study of a new Australian pre-service program*. University of Melbourne.
- Evans, R., Garner, P., & Honig, A. S. (2014). Prevention of violence, abuse and neglect in early childhood: A review of the literature on research, policy and practice. *Early Child Development and Care*, 184(9–10), 1–41. <https://doi.org/10.1080/03004430.2014.910327>
- Fordham, L. (2015). *Extending the reach of the early years education program: The EYEP: Q Research Report*. Children's Protection Society.
- Fordham, L., & Kennedy, A. (2017). Engaging vulnerable children and families: Learning from a new model of education and care. *Australasian Journal of Early Childhood*, 42(4), 30–37. <https://doi.org/10.23965/AJEC.42.4.04>
- Goldberg, S. (2000). *Attachment and development*. Arnold.
- Green, M. J., Tzoumakis, S., Laurens, K. R., Dean, K., Kariuki, M., Harris, F., O'Reilly, N., Chilvers, M., Brinkman, S. A., & Carr, V. J. (2017). Latent profiles of early developmental vulnerabilities in a New South Wales child population at age 5 years. *The Australian and New Zealand Journal of Psychiatry*, 52, 1–13. <https://doi.org/10.1177/0004867417740208>
- Harrison, L., Sumsion, J., Press, F., Wong, S., Fordham, L., & Goodfellow, J. (2011). *A shared early childhood development research agenda. Key research gaps 2010–2015*. Research Institute for Professional Practice, Learning and Education (RIPPLE). Charles Sturt University.



- Hayes, N., O'Toole, L., & Halpenny, A. M. (2017). *Introducing Bronfenbrenner: A guide for practitioners and students in early years education*. Available from <http://ebookcentral.proquest.com>
- Howes, C. (1999). Attachment relationships in the context of multiple caregivers. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of Attachment: Theory, research and clinical applications* (pp. 671–687). The Guilford Press.
- Kafetsios, K. (2004). Attachment and emotional intelligence abilities across the life course. *Attachment and Individual Differences*, 37(1), 129–145.
- Kahneman, D., Diener, E., & Schwarz, N. (Eds.). (1999). *Well-being: Foundations of hedonic psychology*. Russell Sage Foundation Press.
- Keyes, C. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Behaviour Research*, 43, 207–222. <https://doi.org/10.2307/3090197>
- Kostelnik, M. J., Soderman, A. K., Whiren, A. P., Rupiper, M., & Gregory, K. M. (2018). *Guiding Children's Social Development and Learning: Theory and Skills (9th ed.)*. Cengage Learning.
- Mahler, M. S., Pine, F., & Bergman, A. (1975). *The psychological birth of the human infant*. Basic Books.
- Malaguzzi, L. (1997). History, ideas, and basic philosophy: An interview with Lella Gandini. In C. Edwards, L. Gandini, & G. Forman (Eds.), *The hundred languages of children* (pp. 49–98). Ablex.
- Martin, P., & Bateson, P. (2007). *Measuring behaviour: An introductory guide* (3rd ed.). Cambridge University Press.
- Marvin, R., Cooper, G., Hoffman, K., & Powell, B. (2002). The circle of security project: Attachment-based intervention with caregiver-pre-school child dyads. *Attachment and Human Development*, 4(1), 107–124.
- McLean, S. (2016). *The effect of trauma on the brain development of children. Evidence-based principles for supporting the recovery of children in care*. Child Family Community Australia Practice Resource—June 2016. Child Family Community Australia
- Mickelson, K. D., Kessler, R. C., & Shaver, P. R. (1997). Adult attachment in a nationally representative sample. *Journal of Personality and Social Psychology*, 73(5), 1092–1106.
- Mikulincer, M. (1998). Adult attachment style and affect regulation: Strategic variations in self-appraisals. *Journal of Personality and Social Psychology*, 75(2), 420–435.
- Molla, T., & Nolan, A. (2018). Identifying professional functionings of early childhood educators. *Professional Development in Education*, 1-16. <https://doi.org/10.1080/19415257.2018.1449006>
- Niklas, F., Tayler, C., & Gilley, T. (2017). Vulnerable children in Australia: Multiple risk factor analyses to predict cognitive abilities and problem behaviour. *Australian Journal of Education*, 61(2), 105–123. <https://doi.org/10.1177/0004944117710954>
- O'Connor, A., Skouteris, H., Nolan, A., Hooley, M., Cann, W., & Williams Smith, J. (2017). Applying intervention mapping to develop an early childhood educators' intervention promoting parent-child relationships. *Early Child Development and Care*, 1–18. <https://doi.org/10.1080/03004430.2017.1362401>
- Pascoe, S., & Brennan, D. (2017). *Lifting our game. Report of the review to achieve excellence in Australian schools through early childhood interventions*. Victorian Government.
- Perry, B. D. (2004). *Maltreatment and the developing child: How early childhood experience shapes child and culture*. Retrieved from [https://childtrauma.org/wp-content/uploads/2013/11/McCain\\_Lecture\\_Perry.pdf](https://childtrauma.org/wp-content/uploads/2013/11/McCain_Lecture_Perry.pdf)
- Pines, A. M. (2004). Adult attachment styles and their relationship to burnout: A preliminary, cross-cultural investigation. *Work and Stress*, 18(1), 66–80.
- Priel, B. & Shamai, D. (1995). Attachment style and perceived social support: Effects on affect regulation. *Personality and Individual Differences*, 19(2), 235–241.
- Productivity Commission. (2020). *Mental Health, Report no. 95*, Retrieved <https://www.pc.gov.au/inquiries/completed/mental-health/report>

- Roberts, W. (2017). Trust, empathy and time: Relationship building with families experiencing vulnerability and disadvantage in early childhood education and care services. *Australasian Journal of Early Childhood*, 42(4), 4–12. <https://doi.org/10.23965/AJEC.42.4.01>
- Rolfe, S. (2004). *Rethinking attachment theory for early childhood practice. Promoting security, autonomy and resilience in young children*. Allen and Unwin.
- Seligman, M. E. (2011). *Flourish—A new understanding of happiness and well-being—and how to achieve them*. Nicholas Brealey Publishing.
- Shanker, S. (2018, September). Keynote Address. Presented at the Early Childhood Australia Conference, Sydney, Australia.
- Sheridan, S. M., Edwards, C. P., Marvin, C. A., & Knoche, L. L. (2009). Professional development in early childhood programs: Process issues and research needs. *Early Education and Development*, 20(3), 377–401. <https://doi.org/10.1080/10409280802582795>
- Simmons, B. L., Gooty, J., Nelson, D. L., & Little, L. M. (2009). Secure attachment: Implications for hope, trust, burnout, and performance. *Journal of Organizational Behavior*, 30(2), 233–247.
- Sims, M. (2010). What does being an early childhood ‘teacher’ mean in tomorrow’s world of children and family services? *Australasian Journal of Early Childhood*, 35(3), 111–114.
- Sroufe, L. A. (1979). The coherence of individual development. *American Psychologist*, 34, 834–841.
- Sroufe, A. (1996). *Emotional development: The organization of emotional life in the early years*. Cambridge University Press.
- Stratham, J., & Chase, E. (2010). *Childhood wellbeing—A brief overview*. Childhood Wellbeing Research Centre.
- Steel, C. (2016). What the AEDC data is telling us. *Every Child*, 22(2), 20.
- Swan, B., & Dolby, R. (2003). The first five years. *Developing Practice: THE Child, Youth and Family Work Journal*, 6(Autumn), 18–23.
- Temple, E., & Emmett, S. (2013). Promoting the development of children’s emotional and social wellbeing in early childhood settings: How can we enhance the capability of educators to fulfil role expectations? *Australasian Journal of Early Childhood*, 38(1), 66–72.
- Think Equal. (n.d.). Think Equal: Early Childhood social and emotional learning. <https://thinkequal.org/>
- Valentine, K., Thomson, C., & Antcliffe, G. (2009). Early childhood services and support for vulnerable families: Lessons from the Benevolent Society’s Partnerships in Early Childhood program. *Australian Journal of Social Issues*, 44(2), 195–213.
- Victorian Auditor General’s Report. (2015). *Early intervention services for vulnerable children and families*. Victorian Government Printer.
- Victorian Council of Social Services. (2015). *Walk alongside: Co-designing social initiatives with people experiencing vulnerabilities*. Melbourne, Australia: VCOSS.
- Victorian Government. (2013). *Victoria’s vulnerable children: Our shared responsibility strategy 2013–2022*. Author.
- Woolf, A. M. (2013). Social and emotional aspects of learning: Teaching and learning or playing and becoming? *Pastoral Care in Education*, 31(1), 28–42. <https://doi.org/10.1080/02643944.2012.702782>
- Yates, T. M., Egeland, B., & Sroufe, A. (2003). Rethinking resilience: A developmental process perspective. In S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childcare adversities* (pp. 243–266). Cambridge University Press.

**Sue Emmett** has been extensively involved in early childhood education and the translation of research into the practical environment for over thirty-five years. Her professional experience includes early childhood teaching in a range of settings, work as an early childhood educational consultant and teaching and researching within TAFE and Higher Education sectors. She is currently a Senior Lecturer in Education at Federation University Australia where she coordinates

and teaches in bachelor and master of education in early childhood programmes and manages partnerships with external organisations both domestic and international. Prior to this, she worked as Research Fellow within the School of Social and Policy Research at Charles Darwin University where early childhood literacy was central to her research, particularly in relation to rural and remote indigenous education. Her research interests also include the well-being and resilience of children and educators including trauma informed, inclusive pedagogy and relationship-focused practice in early childhood contexts. Her expertise is in the use of qualitative methodologies, including grounded theory.

# Chapter 10

## Children's Self-assessment Plans to Inform Teaching and Provide Summative Data



Anna Fletcher

**Abstract** Self-assessment is widely regarded as a form of assessment that positions learners as critically reflective connectors between the task requirements and the learning process. This requires students to reflect on what they have learned so far; and identify strengths and weaknesses in their learning as they make plans to help them progress to meet their learning goals. This chapter explores self-assessment within an early years' context from two perspectives. First, the chapter highlights the role of self-assessment in fostering children's ability as co-owners of their learning process. Second, the chapter examines how the artefacts of learning generated by the self-assessment process may present a rich source of summative assessment data and subsequent implications for teacher practice. The chapter draws on social cognitive theory to present an analysis of data from students in Year 2 (age eight), which derive from a larger, one-setting, cross-sectional practitioner research study conducted at an independent primary school in the Northern Territory of Australia. The data collection included children's planning templates, writing samples, interviews with students and teachers and email correspondence with teachers. The findings indicate that the children's self-assessment plans combined with their writing samples provided a rich source of data to inform teaching practice, but also as an untapped summative data source. Moreover, the findings show that the children demonstrated metacognitive engagement by articulating goals and strategies while planning their work. These self-assessment considerations were then enacted by the children and informed the teaching as the children developed their writing.

### 10.1 Introduction

Assessment is essential for informing any systemic, data-driven effort to enhance pedagogy and practice in early childhood settings because without it, there would be no data! However, unless the *purpose* of an assessment is clear, it is unlikely

---

A. Fletcher (✉)

Institute of Education, Arts and Community, Federation University Australia, Churchill, VIC, Australia

e-mail: [a.fletcher@federation.edu.au](mailto:a.fletcher@federation.edu.au)

to generate the quality of evidence needed to make it fit for either formative or summative purposes (Dolin et al., 2018; Hayward, 2015; McLachlan et al., 2013; Shepard, 2019; Wiliam, 2017). This chapter highlights ways in which assessment evidence can be utilised for *both* formative and summative purposes within an early years' context. First, the chapter explores the role of self-assessment as a formative approach to fostering children's ability to become agentic co-owners of their learning process. Second, the chapter examines how the artefacts of learning generated by the self-assessment process may present a rich source of summative assessment data and its implications for teacher practice.

The research literature reveals a range of different purposes of assessment. At one end of the spectrum, teachers use formative assessment for the purpose of acquiring the information they need to design instruction and learning experiences to accurately meet the needs of all their students (Wiliam, 2017). Alternatively, the purpose of formative assessment can be to engage students metacognitively in the learning process by requiring them to set goals, monitor, adjust and reflect on their learning as part of self-assessment (Brookhart, 2016; Fletcher, 2018a; Harris & Brown, 2018; Panadero et al., 2016). Conversely, the main purpose of summative assessment is typically to provide information about what learning a student has achieved at a certain time (Dolin et al., 2018), for the purposes of enabling teachers and others to make inferences about students' progress and what has been learned to date (Black & Wiliam, 2018; Davies & Hill, 2009; Harlen, 2005). This information may further be used for reporting purposes (Harlen 2012), or to hold teachers accountable (Readman & Allen, 2013).

Importantly, different purposes do not necessitate different assessments, as Dolin et al. (2018) argue in the context of transforming assessment within STEM education. In particular, they highlight the need for:

Characterising two key purposes of assessment, formative and summative and considering how they are related and can be brought together in developing a dependable approach to summative assessment using evidence collected and used in formative assessment. (p. 54)

Moreover, Dolin et al. (2018) emphasise how educational goals require students to develop a range of competencies that go beyond the specific knowledge and skills of different learning areas. Such competencies include creative thinking, communication, collaboration with others and the ability to select, synthesise, transform and apply information (Dolin et al., 2018; OECD, 2013).

In this chapter, I seek to further progress Dolin and colleagues' exploration of meaningful ways in which assessment evidence can be utilised for *both* formative and summative purposes. Specifically, I seek to elaborate on this in the context of children's learning in the early years of primary school. From the starting point of using self-assessment as a formative learning process, I examine examples of how artefacts generated by this process may also serve to present a rich source of data for summative purposes. In line with the purpose and themes of this book, insights from this chapter seek to add to an enhanced understanding and innovative practices in relation to data use and assessment.

## 10.2 Learning Artefacts for Summative Assessment Purposes

As stated above, summative assessment is typically utilised to provide information about what learning a student has achieved at a certain time (Dolin et al., 2018), for the purposes of enabling teachers and others to make inferences about students' progress and what has been learned to date (Black & Wiliam, 2018; Davies & Hill, 2009). Harlen (2005) stresses the importance of common criteria being set when assessment is used for summative purposes, which entails reviewing gathered information about learning—for example in an artefact—against the broader criteria that define levels or grades. Significantly, she warns that:

Tightly specifying tasks does not necessarily increase reliability and is likely to reduce validity by reducing the opportunity for a broad range of learning outcomes to be included. Greater dependability is found where there are detailed but generic criteria that allow evidence to be gathered from the full range of classroom work. (Harlen, 2005, p. 213)

Moreover, the interpretation of summative assessment data is framed by different assumptions, depending on what theoretical stance the pedagogy is rooted in (James, 2008). For example, when learning and assessment is anchored in a behaviourist stance, it is often assumed that the summative evidence is generated under time-limited test conditions, in which the student draws on their memorised knowledge and skills they have mastered (James, 2008). Conversely, a sociocultural stance, which views learning as a social practice of participation (Gee, 2008; Gipps, 1999; James, 2008), tends to use a holistic approach that elicits evidence of *best* performance, because it is seen as a valid demonstration of what students are capable of achieving (often with support from others). As explained later in this chapter, the interpretation of data in the present study was framed by a social cognitive stance (Bandura, 1986) in which evidence of learning was generated in a scaffolded manner and analysed as a source of data indicating what the student could do. A significant factor in the process that generated the learning evidence was the students' engagement, which is explored in more detail in the next section.

## 10.3 The Role of Self-assessment in Fostering children's Ability as Co-owners of the Learning Process

Before unpacking how children's self-assessment plans can be used to inform teaching and provide summative data, it is necessary to clarify the notions of agency, self-regulated learning, self-assessment and metacognition. A fundamental principle of self-assessment is the idea that people—including young children—can make deliberate choices that influence their circumstances, a notion generally referred to as agency.

Self-assessment is commonly conceptualised as a Self-Regulated Learning (SRL) process (Andrade & Brookhart, 2016; Harris & Brown, 2018), which positions

learners as co-owners in the learning process by critically reflecting on their learning as they address the task requirements (Dann, 2012; Earl, 2013; Fletcher, 2016, 2018a). While most studies have examined SRL among older students, there are a few international examples of SRL studies with younger children as participants (see Perry, 1998; Grau & Whitebread, 2012; Whitebread et al., 2009). The present study, along with others reported in this volume (Harris, 2022; Rouse, 2022), contributes to this growing body of SRL research in the early years.

Being positioned as a co-owner of the learning process requires a child to develop and exercise a sense of agency as a learner. In one of his seminal papers on agency, Bandura (2006) defines the concept as a person's capacity to: (1) form intentions; (2) decide on what strategies to use to help them achieve the outcome they seek; (3) adjust their strategies (if they need to); and (4) reflect upon the effectiveness of their actions and the strategies they used. These four core properties of agency are closely aligned with SRL (see Dignath et al., 2008; Hadwin et al., 2011; Putwain et al., 2016; Steinbach & Stoeger, 2016; Zimmerman, 2000, 2008; Zimmerman & Kitsantas, 2014), which as a term denotes a person's ability to control their thoughts, feelings and actions (planning, monitoring) as they address a learning task (Fletcher, 2016; Zimmerman & Schunk, 2011).

The conceptualisation of SRL presented in this chapter has its base in social cognitive theory, which holds that human functioning is agentic in nature and influenced by three domains, which fluctuate and reciprocate with one another (Bandura, 1986). These three domains consist of *personal* factors (e.g. thoughts and feelings which include a person's knowledge and skills, their self-beliefs and emotional reactions, degree of motivation and interest); the *behavioural* factors, which in this context I prefer to call *learning actions* that students and teachers engage in when addressing a task (Fletcher, 2018a) (e.g. clarifying and sharing learning intentions and success criteria, providing and seeking feedback); and the *situational* factors of the classroom context (curriculum demands, scaffolding and support from the teacher and peers, resources and exemplars). Learning and teaching are perceived to be influenced by the reciprocal relationship between these three domains of influence (Bandura, 2006; Fletcher, 2018a).

Metacognition is generally identified as one of the personal factors, both within social cognitive theory and SRL. However, the concept of metacognition also illustrates the notion of reciprocity among the three domains (Bandura, 1986), as it also fits neatly in the domain of learning actions. Drawing on others, I define metacognition as a person's ability to (1) take in and process information; and (2) use strategies to manage and control their understanding (Brown, 1987; Efklides, 2006; Gascoine et al., 2017; Pintrich & De Groot, 1990; Whitebread et al., 2009).

Having provided the definitions and a brief discussion of the theoretical constructs above, it is now time to shift our focus to more pragmatic considerations of how self-assessment can be used to foster these important dimensions which underpin children's ability as co-owners of the learning process. From a practical stance, it is helpful to think of self-assessment as a cyclical process that involves three phases (please see Table 10.1). The first phase of the cycle is focused on *forethought*. It entails the teacher supporting children to analyse the task, setting partial goals for

**Table 10.1** Self-assessment as a three-phase process (Fletcher, 2018a adapted from Zimmerman, 2011)

Forethought phase	Performance/draft phase	Self-reflection phase
<i>Teacher and student transactions support students to...</i>	<i>Teacher and student transactions support students to...</i>	<i>Teacher and student transactions support students to...</i>
<ul style="list-style-type: none"> <li>analyse learning intentions and success criteria</li> <li>split overall learning intentions and success criteria into partial, task-related goals</li> <li>explore possible learning strategies to employ</li> <li>decide on what strategies and partial goals they will use to monitor progress during performance/drafting phase</li> <li>determine timelines for partial goals</li> </ul>	<ul style="list-style-type: none"> <li>monitor their understanding and seek help</li> <li>check performance against partial goals to monitor progress</li> <li>seek feedback</li> <li>adjust use of strategies</li> </ul>	<ul style="list-style-type: none"> <li>identify strengths and areas to improve for next time</li> <li>attribute reasons for success and challenges</li> </ul>

segments of the task and identifying appropriate learning strategies. The planning that children undertake within the forethought phase is an important component of self-assessment because by understanding explicit criteria, students are able to set more realistic goals for themselves (Andrade, 2010). Setting realistic goals in turn helps students stay motivated and persist with tasks (Panadero et al., 2016). Also, having a clear understanding of the learning goals enable teachers to support children to take action to close the learning gaps.

The second phase of the self-assessment process is the *performance* phase, which involves children exercising self-control by employing learning strategies to solve the task at hand. In this phase, teachers support children to monitor and regulate their learning progress, for example through conferencing. Research shows that conversations among students and teachers about possible strategies that students can use to support their own learning, fulfil an important motivational purpose in helping students sustain their efforts as they learn (Cleary & Labuhn, 2013). Other elements of self-assessment within the performance phase may involve students being prompted to describe, reflect on and judge the degree to which their work currently meets the success criteria and revise their work accordingly (Andrade, 2010; Panadero et al., 2017).

The third phase focuses on *self-reflection*. It entails children and teachers evaluating the effectiveness of the strategies they employed. They also identify the strengths and weaknesses of their approaches in relation to the task criteria and set goals. In line with formative assessment principles, the self-reflection phase needs to inform future learning and teaching, if it is to have a positive impact on learning. Consequently, the self-reflection phase generally prompts a new iteration of the cycle, starting with forethought (Andrade & Brookhart, 2016; Cleary & Labuhn, 2013).



Having clarified the theoretical and empirical base of children's self-assessment plans to inform teaching and provide summative data, this chapter will now turn to contextualise these ideas, by presenting practice insights and illustrations of a child-centred data system, as they were manifested in the present study.

## 10.4 Purpose of the Study and School Context

The findings reported in this chapter derive from a larger cross-sectional practitioner research study (Punch, 2009) which involved a writing project with 256 students in Years 2, 4 and 6 at an independent (non-religious, co-educational, fee-charging) school in Darwin, Australia.

The study was aimed at exploring classroom practice designed to build children's self-assessment capabilities and self-regulated learning skills. It involved children using a planning template to plan an individual writing project. The findings presented in this chapter only draw on data from the Year 2 cohort of 48 students (approximately 8 years old) and relate to the following research question: *How do students employ (a) learning strategies; and (b) develop competence as learners, when using a self-assessment planning template?*

## 10.5 Method

My position as a researcher in this practitioner study can be described as an 'insider-outsider' (Dwyer & Buckle, 2009; Fletcher, 2019). As a long-standing member of staff at the school, I was well immersed in the setting and therefore predominately an insider. Yet, while I was present when the writing projects were initiated in each group, I was an outsider in the sense that I was not present in each class throughout the entire learning process. When interviewing the participants, this relative distance helped avoid the teachers and children assuming that I was already familiar with their experiences (Breen, 2007), which in turn prompted more detailed answers. Equally, not being in the classrooms throughout the learning process helped me step outside the situation and theorise the findings (Burton & Bartlett, 2005).

### 10.5.1 Overview of Study Design and Procedure: Planning Template

The study was conducted as a writing project which involved six phases. First, the teachers and I worked together to develop a planning template for each year level

(the Year 2 template is described in detail below). We used the Northern Territory Curriculum Framework for *Writing* (NTG 2009) to develop the descriptors and prompts on each year level's template. The teachers then used the planning templates as part of the writing lessons with their class, to scaffold a self-assessment process that entailed children's planning, drafting and publishing a text. The length of time taken to conduct the writing project varied between classes. However, while the projects were underway with each year group, I met with each teacher individually and was in regular email correspondence with them, to gather their perceptions of how they found the writing project to be working in their class. I also conducted an initial interview with two students in each class. As data was collected, I organised it and began to identify emerging themes, so these could be explored in follow-up interviews. The third phase of the study occurred the week after the children had finished their writing projects. This involved me re-interviewing the children from each year group about how they had experienced the writing project. The student interviews were conducted in pairs as an informal conversation, which meant that the children were able to feed off each other's ideas. I also followed up with each teacher individually through email correspondence and an interview, which enabled them to comment on the project with the benefit of some hindsight. The fourth phase focused on analysing the students' writing samples for summative purposes. While the class teachers had provided feedback to the children as part of the writing project in the year groups, at this stage of the study, the samples were marked by two external teachers who scored the samples using the writing NAPLAN (National Assessment Programme Literacy and Numeracy) marking criteria (National Assessment Programme n.d.). Finally, I analysed the children's planning templates and compared them with their writing samples, before synthesising the entire data set using social cognitive theory (Bandura, 1986) (Table 10.2).

Each year level's planning template was designed to scaffold the forethought; performance; and self-reflection phases of learning (Fletcher, 2018b; Zimmerman & Schunk, 2011), described above. Each planning template was designed to fit on a folded A3 sheet so that each child's planning was captured in one document that consisted of four pages. The Year 2 template's style of font, Victorian Modern Cursive, was the font used to model handwriting in the Northern Territory and therefore familiar to the children.

The front was a cover page, on which the student wrote their name. The cover page included small illustrations of different types of text, including a postcard, a recipe and the first page of a narrative. Once the children had turned over the cover page, the centre of the template consisted of pages 2 and 3 (see Fig. 10.1), which included specific prompts for the children, set out as 'thought bubbles' that aligned with different aspects of the forethought phase. These included the relevant curriculum learning outcomes (Northern Territory Government, 2009), which had been worded by the teachers in a 'child-friendly' manner, so students would be able to understand these learning outcomes and use them as learning intentions and success criteria for their writing project. The main section of page 2 provided the children with a selection of suggested strategies to refer to, as they undertook the forethought

**Table 10.2** Codes and themes from the data analysis (inclusive of data from years 2, 4 and 6)


Preliminary codes	Thematic categories	Social cognitive theory domain
Engagement; enjoyment; pride; purposeful learning; pressure; learning preferences; own interest; own ideas; imagination; challenging oneself/trying one's best; furthering learning; using strategies; reflective learning; organising thoughts; prediction; getting started; showing one's strength	1. Emotions/motivation 2. Self/autonomy: preferences and choices 3. Self-efficacy 4. Persistence 5. Cognitive considerations	Intrapersonal factors
Feedback/help-seeking; template/writing project; result/summative assessment; learning outcomes (syllabus); writing skills; genres; poetry; structure; strategy examples; marking; time	6. Descriptive references to teaching and learning practices	Behaviour: learning and teaching actions
Audience; collaboration; peer-assessment; responsibility; following instructions; 'real' learning/authenticity	7. Social considerations 8. Value judgements	Social/situational factors

process of splitting the success criteria into partial goals which they would use to monitor their work.

The third forethought prompt, located in the top right corner of the centre pages, required children to consider the type of text and audience they would target as they developed their text. The main section of the right-hand page of the template was a checklist section divided into three sub-headings: text and audience; structure and strategies. The checklist section was designed to transition the children between the forethought and performance phases of the learning cycle. Each sub-heading of the checklist section had some space in which students would write down partial goals during the forethought phase, which they referred to during the performance phase.

In the performance phase—prompted by 'thought bubble' number 4—the children commenced their writing projects by developing a draft and checking their progress against the success criteria identified in the previous phase. It required children to engage SRL skills such as managing time, monitoring and regulating their use of learning strategies to persist with the task at hand.

The back page of the planning template (illustrated in Fig. 10.2) was designed to align with the self-reflection phase and entailed children evaluating how well their learning strategies had worked and attributing reasons for their level of achievement in the task.

		Text type: <i>What sort of text will I write?</i> Narrative Recount Report Procedure Other:	
Band: _____ Learning outcomes: <i>What am I trying to do?</i>		Audience: <i>Who would I like to read my text?</i> Children Teenagers Parents Teachers Other:	
Text and audience	<i>Write texts about different things.</i>		
Structure	<i>Use the rules for writing.</i>		
Strategies	<i>Use the rules for planning and checking what I write.</i>		


			+ Check off as I work
Text and Audience How can I make my text interesting for the reader?	Structure How will I organise my writing?	Strategies What planning steps will help me?	
Use my ideas to write: <ul style="list-style-type: none"> <li>• Stories</li> <li>• Recounts</li> <li>• Reports</li> <li>• Instructions</li> <li>• Letters</li> <li>• Poems</li> <li>• Messages</li> </ul> Use writing and pictures in my work to help the reader understand what I mean.	Narrative: <ul style="list-style-type: none"> <li>• Beginning</li> <li>• Problem</li> <li>• Solution and end</li> </ul> Recounts: <ul style="list-style-type: none"> <li>• What happened when?</li> <li>• What did I think about it?</li> </ul> Reports: <ul style="list-style-type: none"> <li>• What is it?</li> <li>• What is it like? or How does it work?</li> <li>• Why is it like that?</li> </ul> Procedure: <ul style="list-style-type: none"> <li>• What do you need?</li> <li>• In what order do you do things?</li> </ul>	<ul style="list-style-type: none"> <li>• Write a draft</li> <li>• Sound out words</li> <li>• Check spelling</li> <li>• Check sentences</li> <li>• Write a good copy</li> <li>• Do I need a picture?</li> <li>• Publish my work</li> </ul>	My progress
Check list: <i>These are the things I will focus on</i>			
Text and Audience:			My progress
.....			
.....			
.....			
.....			
.....			
.....			
.....			
.....			
.....			
Structure:			
.....			
.....			
.....			
.....			
.....			
.....			
.....			
.....			
.....			
Strategies:			
.....			
.....			
.....			
.....			
.....			
.....			
.....			
.....			
.....			

Fig. 10.1 The centre pages of the planning template with forethought prompts

### 10.6 Findings and Discussion

The focus of this chapter is to explore self-assessment as a data tool for informing teaching as well as to generate summative assessment data within an early years’ context. The intention is to illustrate how self-assessment can be used as an innovative, data-driven learning process to bring together formative and summative assessment purposes within the same assessment task (Dolin et al., 2018). Importantly, this approach entails expanding upon the commonly held understanding of summative assessment as a source of data separated from the learning process and captured at the end (James, 2008). Instead, this is a call for teachers to expand their practice by capturing and analysing valid, richly contextualised data generated by children as co-owners of their learning throughout the forethought; performance; and self-reflection stages of the learning process. To this end, the chapter now turns to presenting a synthesised analysis of data collected from the Year 2 cohort of the study. It draws on the children’s planning templates and work samples, along with the interview data from students and teachers, whose names have been replaced by pseudonyms.

<i>Reflection: Why have I chosen to show my work in this way?</i>	
<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	
<i>5. At the end, think back...</i>	<b>Self-assessment</b>
	<i>How did I improve my writing skills?</i>
	<i>How would I rate my finished work?</i>
<i>What did I do the best?</i>	
<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	
<i>What can I improve?</i>	
<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	
Teacher's feedback:	
<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	

**Fig. 10.2** The self-reflection phase of the self-assessment cycle

### ***10.6.1 Fostering Children’s Ability as Co-owners of Their Learning Process***

The self-assessment process adopted in this study generated numerous examples of children acting as metacognitively engaged co-owners in the learning process by setting goals, monitoring and adjusting their learning. For example, Emma, one of the two participating teachers, noted how her students played an active role in the learning process by being proactive and seeking feedback to help them address their learning goals. As she described it in a follow-up email:

During the project, the students were approaching me more for help and feedback, as it was a new concept of writing. The responsibility was placed on them, so they were asking for confirmation that what they were doing was correct.

When interviewed during the project, the other teacher, Maria explained how the children’s help-seeking prompted her to change her practice by initiating conferences with the students:

I did small groups to start off with, to get an overview and then... yeah... a couple of sessions going through each part [of the planning template]. Some of them I still... some of the kids still didn’t quite understand, and more the fact that... it was just new to them. I’d go through each part again... especially with the bottom part, the strategy they used. Some of them found that bit hard to grasp. And did not realise that they are doing these things [applying strategies to solve a task] anyway...

Maria found that conducting conferences helped her provide feedback to individual children, tailored around where they were at in the learning process. Both Maria and Emma interpreted this as a sign of their students engaging in their learning. Moreover, both used the children’s help-seeking as a ‘point-of-need’ teaching moment, as an opportune, child-initiated prompt to design instruction (Wiliam, 2017) and to provide contextualised, specific, meaningful and timely feedback to students, which would inform their next learning step.

From a research perspective, children taking the initiative to seek help align with the notion of young children’s metacognitive engagement which is manifested as using strategies to manage and control understanding (Gascoine et al., 2017; Marulis et al., 2020; Whitebread et al., 2009). The planning template appeared to have drawn children’s attention to—and frequently prompted them to ask for help about—how to develop a range of task-related competencies, such as identifying a specific audience for their text. In addition, the template provided a rich source of data about students’ intentions, developed during the forethought phase. As illustrated in Table 10.3, the majority of children’s templates indicated that students chosen target audience was other children and to a lesser degree, parents. When students were asked about their choices in the interviews, several explained that they had chosen children as their audience because they wanted their peers to read their writing.

**Table 10.3** Children’s intended audiences, as indicated by their planning templates

Intended audience	Year 2 templates ( $n = 48$ )
Children	46%
Teenagers	13%
Parents	21%
Teachers	13%
Other	Friends (3%) Grandmother (3%) Sister (3%)

*Note on Table 10.3:* due to rounding, percentages may not equal 100%

In addition to identifying the children's target audiences, the planning templates indicated that the children intended to pay attention to sentence structure when writing their text. As noted elsewhere (Fletcher, 2021), in Year 2, a quarter ( $n = 12$ ) of the children's checklists of goals to keep in mind, included notes to remind themselves to check their sentence structure, which demonstrates students' growing awareness of how to self-regulate as learners (Steinbach & Stoeger, 2016; Zimmerman & Schunk, 2011).

The planning templates were not only an important source of information about the children's forethought considerations. The self-reflection section of the planning templates also provided useful information about the children's awareness of what skills they thought they needed to develop further, in the next iteration of the SRL cycle (Andrade & Brookhart, 2016; Cleary & Labuhn, 2013). Moreover, the planning templates provided a chronological dimension to understanding the children's metacognitive engagement in the learning process. For example, 18% of the Year 2 planning templates contained punctuation goals, which the children wrote down as part of the forethought step of the learning process. However, in the self-reflection section that the children completed after they had finished the writing project, nineteen out of forty-eight (40%) of the Year 2 planning templates identified punctuation as an area that the student thought was particularly successful (19%), or which they needed to improve (21%). Drawing on the previous work of Whitebread et al. (2009) this finding is an indicator of both children's metacognitive knowledge and metacognitive regulation. The increased frequency in nominating punctuation goals, from the forethought phase (18%) to the self-reflection phase (40%) suggests a pattern of association between the self-assessment process and the children's increasing awareness of and ability to articulate specific goals, which is an important component of SRL (Andrade & Heritage, 2018; McCardle et al., 2016; Schunk, 1996).

The children's articulation of specific goals was not limited to relating to audience goals and punctuation goals. The student interviews gave an indication of the children's awareness of the need for texts to be cohesive; for example, by reflecting on whether their text 'made sense':

Q: Was there anything in particular that you really tried to keep in mind [when planning your text]?

Clive: Nice writing...

Q: Okay...

Clive: And structure. Also, if it made sense.

(Follow-up interview with Clive, Year 2 student)

In line with the notion of using self-assessment to foster children's capacity as co-owners in the learning process, the teacher interviews highlighted different aspects of students' engagement. As illustrated below, Emma appeared to mainly have noticed behavioural aspects of engagement from her students. However, her comments also allude to SRL, as she suggests that the children's awareness of the task requirements contributed to them engaging with the task:

Q: Did you think that [your students] seemed engaged when they wrote their writing

Emma: Yes, they did really well. Like there was no talking, or carry on, or anything...I think that once they knew what they had to do...

(Follow-up interview with Emma, Year 2 teacher)

In the follow-up interview with Maria, she also commented on her students being highly engaged in the task: *'They were so involved with it. And they kept writing, and writing, and writing!'*. It appears likely that this level of enthusiastic, deep, engaged and self-regulated learning had a positive influence on the children's ability to demonstrate competence in a range of writing aspects. Maria provided some poignant comments which highlighted how she noted links among the children's motivation, pride and sense of ownership of their learning. In her follow-up interview, she expressed how the lower achievers in her class had shown a new side of themselves as learners:

Q: Would you say that there was a particular group of kids who achieved more than you expected them to, or some less?

Maria: Uhm... I'd actually have to say... Those that are often hard to motivate got really into this. Uhm... and it might have been that sense of... eh, a bit of ownership, freedom with what they were doing.

Q: Yeah?

Maria: In their eyes... that... uhm... gave them that drive to... uhm... to do the best that they could. Like one of my students... he wanted [to] take his book home to show his mum his story. So, you know, that interest was there. Some that I would have liked to challenge themselves a bit more, didn't.

(Follow-up interview with Maria, Year 2 teacher)

The findings presented above demonstrate how the self-assessment process, which positioned the children as critically reflecting co-owners of the learning process, generated evidence of children's metacognitive engagement. This engagement was demonstrated through the children's articulation of goals and strategies as they planned their work, as part of the forethought phase; enacted through the performance phase when they developed their texts; and again articulated in the self-reflection phase, when identifying strengths, weaknesses and next goals. Significantly, this three-phase self-assessment approach, with its particular emphasis on scaffolding forethought, had implications for teachers' practice in the sense that it prompted 'point-of-need' teaching moments, which in turn resulted in shifts in how teachers designed instruction (Wiliam, 2017) by using conferences. The implications for teacher practice are further explored in the next section but from a stance of the children's planning documents and work samples as a rich source of summative assessment data.



### 10.6.2 *Artefacts of Self-assessment as Summative Assessment* *Data: Implications for Teacher Practice*

The purpose of summative assessment is to enable teachers (and others) to make inferences about what a student has learned to date (Black & William, 2018; Davies & Hill, 2009; Dolin et al., 2018). Before presenting findings derived from the Year 2 students' planning templates and work samples—the study's self-assessment artefacts—it is necessary to clarify my stance in interpreting this evidence of learning. Given that it was generated as part of a scaffolded learning process—a procedure that elicits evidence of *best* performance, by allowing students to seek help from more able peers (Gipps, 1999)—the summative assessment data is interpreted in a situated context.

Interestingly, in the follow-up interviews with the two teachers conducted after the project had finished, neither Maria nor Emma appeared to have registered how the writing project had generated rich data that could be used for summative purposes. For example, when asked what she had noticed about the students' writing skills in the project, Emma pondered:

I could tell they understood all the text types. [...] They did not just know what the word is, but they knew how to write one. [...] On the whole, I think they did really well. I was surprised reading [the students' writing samples], how well they did.

However, when asked if she intended to draw on the data as she prepared the children's term reports, she spontaneously commented that she hadn't thought about using the data for reporting. In hindsight, she recognised that it would have been a good idea to keep a running record of the skills and competencies the children showed during the learning conferences and 'point-of-need' teaching moments that the children's help-seeking prompted, for example in relation to the elements of a particular text type.

Overall, six different types of texts were produced by the children in Year 2 (please see Table 10.4). By far, the most popular text type was narrative (43%), an imaginative text with descriptive language and a clear plot including an orientation, complication and resolution. The Year 2 children's narratives included some interesting examples of complications, frequently of a moral nature, which were resolved through punishment. For example, in Sam's narrative, a '*very naughty [sic] king*', who '*lied all the time*' was punished by two knights, their dragon and ten chlorine-squirting snakes. Another narrative, written by Grace, told the story of an evil witch and a pair of magic scissors, which helped capture the evil witch by cutting the ropes to a hidden trap. Narratives such as these provided rich snapshots of students' understanding of a range of writing considerations, such as their use of ideas, vocabulary, text structure, spelling, use of cohesive devices, etc. which all constitute assessment criteria in formal, standardised assessment tools such as the National Assessment Programme Literacy and Numeracy (NAPLAN) (Fletcher, 2021). The NAPLAN marking rubrics (National Assessment Plan n.d.), which provide detailed descriptors for the purpose of assessing ten dimensions of writing in the NAPLAN test, were used by the external markers who scored the children's writing samples in this study. Ironically—in line

**Table 10.4** Students' choice of text, as indicated on their planning template

Text type	Year 2 ( $n = 48$ )
Narrative	43%
Procedure	13%
Information report	11%
Recount	15%
Other	Letter 11%
	Poem 9%

*Note on Table 10.4:* due to rounding, percentages may not equal 100%

to established practice at the school—the same NAPLAN rubrics were regularly used by both Maria and Emma to moderate common assessment tasks. Yet, as highlighted above, it hadn't occurred to Emma that the data produced in the project would be useful for summative assessment purposes.

In their interviews, the teachers spoke about how the range of different text types had prompted them to implement teaching strategies such as conferences with groups of children who had chosen similar text types. For example, as illustrated in the quote below, Maria is referring to key components of the writing process, in which she scaffolded the children to employ higher-order thinking skills during the forethought phase which entailed helping her students become aware of the text structure and features associated with the text type. Her comments also indicate how several of the children sought to broaden their writing repertoire, by choosing text types that had not been covered to a great extent in class.

They needed me to go through it quite a bit. But... I think it all came down to what writing piece they chose. [...] With the narratives, most of them were okay because they knew the format. Whereas if they were doing something different, poems or letter writing, which we haven't touched on as much, that's when they needed a lot of help to fill in the sheet.

(Follow-up interview with Maria)

From a summative assessment perspective, the children's writing samples in combination with their planning templates provided a rich source of evidence of growth in children's awareness of text features and ability to apply these. The children's awareness of punctuation goals discussed earlier in this chapter, illustrated this. Another example can be drawn from the children's use of paragraphs. Among the children in Year 2, two of forty-eight children (4%) nominated paragraphs on the planning templates, but 25% demonstrated use of paragraphs. In line with taking reliability measures such as using common, defined level criteria when reviewing assessment data for summative purposes (Harlen, 2005), this data is better understood when contextualised within the curriculum. Within the Northern Territory Curriculum Framework for *Writing* (Northern Territory Government, 2009), on which the writing project was based, paragraphs emerge as an indicator in Stage 2, which applies to Year 2 students, with students expected to demonstrate a solid command of paragraphs by Year 5. This aligns with the Australian curriculum, which stipulates that

students in Year 3 should ‘understand that paragraphs are a key organisational feature of written texts’ (Australian Curriculum n.d.).

The discussion of findings above is aimed at providing an example of the possibilities for teachers to respond to the call by Dolin et al. (2018) to consider how formative and summative purposes of assessment may be brought together in a dependable approach. As articulated in the introduction of this chapter, assessment is an essential component of any initiative seeking to enhance pedagogy, because without assessment there is no data to inform the learning and teaching process. However, as I have tried to illustrate in this chapter, the process of engaging children as co-owners of the learning process presents an innovative way of using data to inform the learning and teaching process. Moreover, the process can also be used to capture a running record of valid and rich summative snapshots of children’s understanding and capacity to accomplish particular skills in a specific context.

## 10.7 Limitations and Conclusion

The findings presented in this chapter are necessarily limited in aims and scope, as they are based on one school setting. Nevertheless, I hope readers will gain a rich understanding of how self-assessment can shape children’s learning in a meaningful, child-centred learning process of three phases, which simultaneously generates rich data that can be used for summative purposes.

Drawing on data which included the children’s planning templates, writing samples, interviews with students and teachers and email correspondence with teachers, three conclusions can be drawn in relation to the research question: *How do students employ (a) learning strategies; and (b) develop competence as learners, when using a self-assessment planning template?*

First, the planning templates provided a rich source of information about the children’s forethought considerations. In addition, the self-reflection section of the planning templates provided useful information about children’s awareness of what skills they thought they needed to develop further, in the next iteration of the SRL cycle. Thus, the planning templates provided a chronological dimension to understanding the children’s metacognitive engagement in the learning process.

Second, the self-assessment process, which positioned children as critically reflecting co-owners of the learning process, generated evidence of the children’s metacognitive engagement. This engagement was demonstrated through the children’s articulation of goals and strategies as they planned their work, as part of the forethought phase; enacted through the performance phase when they developed their texts and again articulated in the self-reflection phase, when identifying strengths, weaknesses and next goals. In turn, this three-phase self-assessment approach, with its particular emphasis on scaffolding forethought, had implications for teachers’ practice in the sense that it prompted ‘point-of-need’ teaching moments, which in turn resulted in shifts in how teachers designed instruction (William, 2017) by using

conferences. The point-of-need conferences were similar to the carefully orchestrated 'mini-lessons' observed in classrooms in which high levels of self-regulation feature (Perry, 1998).

Third, from a summative assessment perspective, the children's writing samples in combination with their planning templates provided a rich source of evidence of growth in students' awareness of text features and ability to apply these. However, the teachers did not recognise this as a summative assessment source until they were interviewed after the project had been completed. This was possibly because they regarded the writing project primarily as a learning-focused process, rather than as a potential source of summative assessment data. This finding suggests the need to accompany the children's planning template with a running record template or data collection app for teachers to capture summative data during the learning process.

## References

- Australian Curriculum. (n.d.). *F-10 curriculum, English*. Australian Curriculum. <https://www.australiancurriculum.edu.au/f-10-curriculum/english/?strand=Language&strand=Literature&strand=Literacy&capability=ignore&priority=ignore&year=11577&elaborations=true&cd=ACE LA1479&searchTerm=acela1479#dimension-content>. Accessed April 9, 2021.
- Andrade, H. (2010). Student as the definite source of formative assessment: Academic self-assessment and the self-regulation of learning. In H. Andrade & G. J. Cizek (Eds.), *Handbook of formative assessment* (pp. 90–105). Routledge.
- Andrade, H., & Heritage, M. (2018). *Using formative assessment to enhance learning, achievement, and academic self-regulation*. Routledge.
- Andrade, H. L., & Brookhart, S. M. (2016). The role of classroom assessment in supporting self-regulated learning. In D. Laveault & L. Allal (Eds.), *Assessment for learning: Meeting the challenge of implementation* (pp. 293–309). Springer.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.
- Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Science*, 1(2), 164–180. <https://doi.org/10.2307/40212163>
- Black, P., & Wiliam, D. (2018). Classroom assessment and pedagogy. *Assessment in Education: Principles, Policy & Practice*, 1–25. <https://doi.org/10.1080/0969594X.2018.1441807>
- Breen, L. J. (2007). The researcher 'in the middle': Negotiating the insider/outsider dichotomy. *The Australian Community Psychologist*, 19(1), 163–174.
- Brookhart, S. M. (2016). Building assessments that work in classrooms. In G. T. L. Brown & L. R. Harris (Eds.), *Handbook of human social conditions in assessment* (pp. 350–365). Routledge.
- Brown, A. L. (1987). Metacognition, executive control, self-regulation, and other more mysterious mechanisms. In F. E. Weinert & R. H. Kluwe (Eds.), *Metacognition, motivation and understanding* (pp. 65–116). Lawrence Erlbaum Associates.
- Burton, D., & Bartlett, S. (2005). *Practitioner research for teachers*. SAGE. <https://doi.org/10.4135/9780857024527>
- Cleary, T. J., & Labuhn, S. (2013). Application of cyclical self-regulation interventions in science-based contexts. In H. BembenuTTY, T. J. Cleary & A. Kitsantas (Eds.), *Applications of self-regulated learning across diverse disciplines: A tribute to Barry J. Zimmerman* (pp. 89–124). Information Age Publishing Inc.
- Dann, R. (2012). *Promoting assessment as learning: Improving the learning process*. Routledge.

- Davies, A., & Hill, M. (2009). *Making classroom assessment work: New Zealand edition*. NZCER Press.
- Dignath, C., Buettner, G., & Langfeldt, H.-P. (2008). How can primary school students learn self-regulated learning strategies most effectively? A meta-analysis on self-regulation training programmes. *Educational Research Review*, 3(2), 101–129. <https://doi.org/10.1016/j.edurev.2008.02.003>
- Dolin, J., Black, P., Harlen, W., & Tiberghien, A. (2018). Exploring relations between formative and summative assessment. In J. Dolin & R. Evans (Eds.), *Transforming assessment: Through an interplay between practice, research and policy* (pp. 53–80). Springer International Publishing. [https://doi.org/10.1007/978-3-319-63248-3\\_3](https://doi.org/10.1007/978-3-319-63248-3_3)
- Dwyer, S. C., & Buckle, J. L. (2009). The space between: On being an insider-outsider in qualitative research. *International Journal of Qualitative Methods*, 8(1), 54–63.
- Earl, L. M. (2013). *Assessment as learning: Using classroom assessment to maximize student learning* (2nd ed.). Corwin Press.
- Eklides, A. (2006). Metacognition and affect: What can metacognitive experiences tell us about the learning process? *Educational Research Review*, 1(1), 3–14. <https://doi.org/10.1016/j.edurev.2005.11.001>
- Fletcher, A. K. (2016). Exceeding expectations: Scaffolding agentic engagement through assessment as learning. *Educational Research*, 58(4), 400–419. <https://doi.org/10.1080/00131881.2016.1235909>
- Fletcher, A. K. (2018a). Classroom assessment as a reciprocal practice to develop students' agency: A social cognitive perspective. *Assessment Matters*, 12, 34–57. <https://doi.org/10.18296/am.0032>
- Fletcher, A. K. (2018b). Help seeking: Agentic learners initiating feedback. *Educational Review*, 70(4), 389–408. <https://doi.org/10.1080/00131911.2017.1340871>
- Fletcher, A. K. (2019). An invited outsider or an enriched insider? Challenging contextual knowledge as a critical friend researcher. In M. Green, S. Plowright & N. F. Johnson (Eds.), *Educational researchers and the regional university: Agents of regional-global transformation* (pp. 75–92). Springer. [https://doi.org/10.1007/978-981-13-6378-8\\_5](https://doi.org/10.1007/978-981-13-6378-8_5)
- Fletcher, A. K. (2021). Australia's national assessment programme rubrics: An impetus for self-assessment? *Educational Research*, 63(1), 43–64. <https://doi.org/10.1080/00131881.2020.1850207>
- Gascoine, L., Higgins, S., & Wall, K. (2017). The assessment of metacognition in children aged 4–16 years: A systematic review. *Review of Education*, 5(1), 3–57. <https://doi.org/10.1002/rev3.3077>
- Gee, J. P. (2008). A sociocultural perspective on opportunity to learn. In P. A. Moss, D. C. Pullin, J. P. Gee, E. H. Haertek, & L. J. Young (Eds.), *Assessment, equity, and opportunity to learn* (pp. 76–108). Cambridge University Press.
- Gipps, C. (1999). Socio-cultural aspects of assessment. *Review of Research in Education*, 24(1), 355–392. <https://doi.org/10.2307/1167274>
- Grau, V., & Whitebread, D. (2012). Self and social regulation of learning during collaborative activities in the classroom: The interplay of individual and group cognition. *Learning and Instruction*, 22(6), 401–412. <https://doi.org/10.1016/j.learninstruc.2012.03.003>
- Hadwin, A. F., Järvelä, S., & Miller, M. (2011). Self-regulated, co-regulated, and socially shared regulation of learning. In B. J. Zimmerman & D. H. Schunk (Eds.), *Handbook of self-regulation of learning and performance* (pp. 65–84). Routledge.
- Harlen, W. (2005). Teachers' summative practices and assessment for learning—Tensions and synergies. *The Curriculum Journal*, 16(2), 207–223. <https://doi.org/10.1080/09585170500136093>
- Harlen, W. (2012). On the relationship between assessment for formative and summative purposes. In J. Gardner (Ed.), *Assessment and Learning*. Sage.
- Harris, P. (2022). *Children as assessors of their own learning: The power of listening to children's own reflections*. This volume.

- Harris, L. R., & Brown, G. T. L. (2018). *Using self-assessment to improve student learning*. Routledge.
- Hayward, L. (2015). Assessment is learning: The preposition vanishes. *Assessment in Education: Principles, Policy & Practice*, 22(1), 27–43. <https://doi.org/10.1080/0969594X.2014.984656>
- James, M. (2008). Assessment and learning. In S. Swaffield (Ed.), *Unlocking assessment: Understanding for reflection and application* (pp. 20–35). Routledge.
- Marulis, L. M., Baker, S. T., & Whitebread, D. (2020). Integrating metacognition and executive function to enhance young children's perception of and agency in their learning. *Early Childhood Research Quarterly*, 50, 46–54. <https://doi.org/10.1016/j.ecresq.2018.12.017>
- McCardle, L., Webster, E. A., Haffey, A. & Hadwin, A. F. (2016). Examining students' self-set goals for self-regulated learning: Goal properties and patterns. *Studies in Higher Education*, 1–17. <https://doi.org/10.1080/03075079.2015.1135117>
- McLachlan, C., Edwards, S., Margrain, V., & McLean, K. (2013). *Children's learning and development: Contemporary assessment in the early years*. Palgrave Macmillan.
- National Assessment Program. (n.d). *National assessment program—Literacy and numeracy 2010: Writing narrative marking guide*. [https://www.nap.edu.au/\\_resources/2010\\_Marking\\_Guide.pdf](https://www.nap.edu.au/_resources/2010_Marking_Guide.pdf)
- Northern Territory Government. (2009). *NT curriculum framework: English*. Northern Territory Government.
- OECD. (2013). *Synergies for better learning*. <https://doi.org/10.1787/9789264190658-en>
- Panadero, E., Jonsson, A., & Botella, J. (2017). Effects of self-assessment on self-regulated learning and self-efficacy: Four meta-analyses. *Educational Research Review*, 22, 74–98. <https://doi.org/10.1016/j.edurev.2017.08.004>
- Panadero, E., Jonsson, A., & Strijbos, J.-W. (2016). Scaffolding self-regulated learning through self-assessment and peer assessment: Guidelines for classroom implementation. In D. Laveault & L. Allal (Eds.), *Assessment for learning: Meeting the challenge of implementation* (pp. 311–326). Springer.
- Perry, N. E. (1998). Young children's self-regulated learning and contexts that support it. *Journal of Educational Psychology*, 90(4), 715–729. <https://doi.org/10.1037/0022-0663.90.4.715>
- Pintrich, P. R., & De Groot, E. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82(1), 33–40.
- Punch, K. F. (2009). *Introduction to research methods in education*. Sage.
- Putwain, D. W., Nicholson, L. J., & Edwards, J. L. (2016). Hard to reach and hard to teach: Supporting the self-regulation of learning in an alternative provision secondary school. *Educational Studies*, 42(1), 1–18. <https://doi.org/10.1080/03055698.2015.1108839>
- Readman, K., & Allen, B. (2013). *Practical planning and assessment*. Oxford University Press.
- Rouse, E. (2022). *Children as assessors of their own learning: The power of listening to children's own reflections*. This volume.
- Schunk, D. H. (1996). Goal and self-evaluative influences during children's cognitive skill learning. *American Educational Research Journal*, 33(2), 359–382. <https://doi.org/10.2307/1163289>
- Shepard, L. A. (2019). Classroom assessment to support teaching and learning. *The ANNALS of the American Academy of Political and Social Science*, 683(1), 183–200. <https://doi.org/10.1177/0002716219843818>
- Steinbach, J., & Stoeger, H. (2016). How primary school teachers' attitudes towards self-regulated learning (SRL) influence instructional behavior and training implementation in classrooms. *Teaching and Teacher Education*, 60, 256–269. <https://doi.org/10.1016/j.tate.2016.08.017>
- Whitebread, D., Coltman, P., Pasternak, D. P., Sangster, C., Grau, V., Bingham, S., Almeqdad, Q., & Demetriou, D. (2009). The development of two observational tools for assessing metacognition and self-regulated learning in young children. *Metacognition and Learning*, 4(1), 63–85. <https://doi.org/10.1007/s11409-008-9033-1>
- Wiliam, D. (2017). Assessment and learning: Some reflections. *Assessment in Education: Principles, Policy & Practice*, 24(3), 394–403. <https://doi.org/10.1080/0969594X.2017.1318108>

- Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boerkaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13–39). Elsevier Academic Press.
- Zimmerman, B. J. (2008) Goal Setting: A key proactive source of academic self-regulation. In D. H. Schunk & B. J. Zimmerman (Eds.), *Motivation and self-regulated learning: Theory, research, and applications* (2012 ed., pp. 267–296). Routledge.
- Zimmerman, B. J. (2011). Motivational sources and outcomes of self-regulated learning and performance. In B. J. Zimmerman & D. H. Schunk (Eds.), *Handbook of self-regulation of learning and performance* (pp. 49–64). Routledge.
- Zimmerman, B. J., & Kitsantas, A. (2014). Comparing students' self-discipline and self-regulation measures and their prediction of academic achievement. *Contemporary Educational Psychology*, 39(2), 145–155. <https://doi.org/10.1016/j.cedpsych.2014.03.004>
- Zimmerman, B. J., & Schunk, D. H. (2011). Self-regulated learning and performance: An introduction and an overview In B. J. Zimmerman & D. H. Schunk (Eds.), *Handbook of self-regulation of learning and performance* (pp. 1–12). Routledge.

**Anna Fletcher's** research describes, implements and theorises effective classroom assessment applications to promote student voice, student agency and self-regulated learning. Her research specialises on student agency within the forethought phase of assessment as learning, with an aligned focus on teachers' capacity building in formative assessment. Anna's publications address three areas: (1) student agency, achievement and self-efficacy within classroom assessment from a perspective of social cognitive theory; (2) practitioner research and teachers' capacity building; and (3) the role of education to build human capital in place-based contexts. She has successfully led a number of funded mixed-methods projects into teachers' capacity building and place-based regional development through education, resulting in projects being completed within budget and on time. As convenor of the AARE Assessment and Measurement SIG and as a member of the Federation University research groups PeCALE (<https://federation.edu.au/schools/school-of-education/research/research-groups/pedagogy,-curriculum,-assessment-and-learner-engagement-pecale>) and Assessment, Impact and Reflection in Teacher Education (AIRTE) she welcomes collaboration across institutions. As a native Swedish speaker, her works closely with Scandinavian universities in her research.



# Chapter 11

## Child-Voiced Assessment for Understanding Children’s Learning and Transforming Pedagogic Practices



**Pauline Harris**

**Abstract** Aligned with contemporary approaches to assessment that draw on ecological and sociocultural understandings of children in contexts, this chapter explores child-voiced assessment and the rich, in-depth insights it yields into children’s strengths, interests, and processes of participation and learning. Given assessment data are used to inform and transform children’s learning and the pedagogies they experience, the voices of children as key stakeholders in assessment must be considered. Acknowledging all children’s right to have input on decisions affecting their lives, child-voiced assessment is discussed, with particular explorations and examples of the use of dialogic encounters with children, and multimodal documentation and representation of children’s learning and engagement. This discussion is framed by principles of authentic child-voiced assessment that address and go beyond conventional notions of reliability, validity and fairness. Examples of voiced data from the author’s research highlight not only what can be learned and gained from children’s voices about their learning and engagement-but also demonstrate how the process itself of engaging with children’s voices can and does transform pedagogic practices.

### 11.1 Introduction

When data are used to inform teaching and learning, assessment is a powerful tool for transforming pedagogic practices. But as key stakeholders in assessment, what place do children, and more specifically their voices, have in assessment data that are gathered to inform their learning and transform the pedagogies they experience? This chapter explores this question, informed by ecological and sociocultural understandings of children in context (McLachlan, 2017), as discussed in Chap. 1. In exploring this question, all children’s right to have input on decisions affecting their lives is acknowledged – begging the need to consider how young children as citizens are

---

P. Harris (✉)

Chair, Early Childhood (Research), University of South Australia, Adelaide, SA, Australia  
e-mail: [Pauline.Harris@unisa.edu.au](mailto:Pauline.Harris@unisa.edu.au)



imagined and constructed in and through assessment practices and the pedagogies they inform.

Framed by principles of authentic assessment and strengths-based views of children in early childhood settings, the use of dialogic encounters with children, and trustworthy, multimodal documentation and representation of children's learning and engagement are discussed. Examples of voiced data are provided from the author's research, which highlight not only what can be learned and gained from children's voices about their learning and engagement—but also demonstrate how the process itself of engaging with children's voices can and does transform pedagogic practices. The chapter explores the following key themes:

1. The importance of engaging with children's voices to assess learning and engagement
2. The significance of dialogic encounters with young children
3. Understanding children's learning and engagement through dialogic encounters
4. Using child-voiced assessment to transform pedagogic practices
5. Key messages and implications for educators.

## **11.2 Importance of Engaging with children's Voices to Assess Learning and Engagement**

The term, child-voiced assessment, is used in this chapter to refer to evaluative documentation of child-voiced data—that is, 'listening' data that encapsulates authentic engagement with children's voices, allowing children's agentic voices to reveal their learning and engagement as they go about their business. This includes child-voiced appraisals of learning and engagement by directly engaging with children who identify and reflect on aspects of their own learning and engagement. So often in early childhood, reference is made to observational records, but in these observations, educators must listen not only to what they hear but also to what they see and sense if they are to truly engage with children's voices.

Engaging with children's voices to help inform decisions impacting their lives is a well-documented practice that honours Article 12 in the UN Convention on the Rights of the Child (1989):

States Parties shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child.

Whilst this right is honoured across some spheres of young children's lives, assessment is a domain where engaging with young children's voices is also very important and yet under-researched. Engaging with children's voices in assessment empowers children as learners (Roberts, 2002); and is integral to understanding the ways in which children make sense of their educational experiences and therefore, what educators need to provide (Pascal & Bertram, 2016a) in order to build on children's funds of knowledge (González et al., 2005). Engaging with children's voices can

challenge adults' assumptions and raise expectations, providing insights into children's capabilities that educators may otherwise not see or understand (Harris & Manatakis, 2013). Through active, responsive listening and child-voiced assessment helps make visible the competent child (Rinaldi, 2006, 2012) and empowers and transforms pedagogic practices in response:

A leap in understanding occurs when educators grasp that documentation is more than a record or retelling of an experience that shows what children said and did—though this is indeed the starting point. Documentation offers insight into children's thinking, feeling and worldview. When we make their ideas and working theories about the world visible to others, we may then study those views with others to broaden our perspectives and our responsiveness. (Wien, 2013 p 4)

Learning stories (Carr & Lee, 2012) have made significant in-roads to including children's voices in the documentation of their learning, whilst including educators' and families' voices too. As such, learning stories provide accounts of children's experiences that describe and interpret significant points arising in the experience. However, educators need to take care to ensure that learning stories do indeed honour children's voices and not revert to being adult-led, adult-voiced stories and interpretations. There also needs to be scope and opportunity for children to revisit their learning stories and to reflectively re-engage with what particular stories documented in light of the learning journeys children have travelled since.

Children's portfolios (Peters et al., 2009) also provide a means for including children's voices in assessment, with a trend towards print-based portfolios gradually giving way to e-portfolios (Hooker, 2019) as a means to enhance access and engagement with families. Individual children's portfolios typically contain a collection of various documentations and work samples that reflect a child's learning and engagement progression over the course of a year. Portfolios provide opportunities for children, families and educators alike to reflect on a child's learning and accomplishments; and allow for children to inform what is put in their portfolio—thereby honouring children's voices and agency in assessment and documentation processes. Children can revisit their portfolios and use earlier work in their portfolios to reflect on current success or progress (Ministry of Education, 2004).

In addition to these approaches, dialogically engaging with children on a day-to-day basis lends insights into a child's learning from the child's point of view and in the child's own multimodal voice. This brings us to the notion of voice, and children's voices in particular. 'Children's voices' is defined here as children's expressions of their perspectives, ideas, insights, propositions, wonderings, feelings, desires and aspirations. Children's voices are not limited to spoken language, but include many modes of expression that include:

- Visual voices, e.g. drawing, painting, dioramas, photography
- Musical voices, e.g. dance, song, music
- Physical voices, e.g. movement, gesture
- Embodied voices, e.g. how children move, where they go, spaces they inhabit and frequent, body language and facial expressions
- Written voices, i.e. words written down

- Spoken voices, i.e. spoken words.

Engaging with children's voices as part of assessment activity necessarily involves being in multimodal dialogue that tunes in to how children engage and express themselves and their learning as they go about their learning journey.

### 11.3 Dialogic Encounters with Young Children

To engage with child-voiced assessment, educators must truly encounter the child—to support, understand and assess children's learning and engagement through their multimodal voices. Such is what it means to engage in participatory, dialogic pedagogies that foreground children's agency as learners and involve co-construction and dialogue with, not to, children (de Sousa et al., 2019; Kangas et al., 2015; Pascal & Bertram, 2016b).

Dialogic encounters (Freire, 1983) provide a means for engaging with child-voiced assessment—even though dialogic encounters were first conceived for adults, with assessment far from mind. Dialogic encounters are collective encounters with people in and about their worlds. These encounters see people coming together in deep, shared reflection and action to address shared problems and transform their realities in their worlds. Dialogic encounters have since been adapted for dialogically engaging with young children in two studies. One of these studies involved engaging with children about their perspectives of and wishes for their local community worlds so as to inform their state government's strategic planning decisions (Harris & Manatakis, 2013). The other study involved engaging with young children and families in their homes and communities to build community capacity for supporting young children's multilingual literacies in home languages and English (Harris et al., 2020).

Transposed to engaging with child-voiced assessment with young children, dialogic encounters provide means for transacting with children's learning and knowledge production and using that information to assess children's capabilities and dispositions in ways that can deepen learning and transform pedagogic practices. However, for dialogic encounters to be authentic, there are a number of key principles to put in place (Freire, 1983; Harris & Manatakis, 2013; Harris et al., 2020). What these principles are and how they can be applied to child-voiced assessment are shown in Table 11.1.

Together, these principles *inter alia* address reliability, validity and fairness that are discussed in Chap. 1. The critical key is that child-voiced assessment is integral to, not separate from, how we deeply, contextually, understand children's learning and engagement is part and parcel of how educators engage with children on a daily basis, as explored below.

**Table 11.1** Principles of dialogic encounters (Harris et al., 2020) and their applications to child-voiced assessment

Principle	Application to child-voiced assessment
Apposite settings	Educators situate the encounters in places conducive to the focus at hand. E.g., if the focus is reading, then the encounter occurs in a suitable reading place
Cultural responsiveness	Educators’ provide materials, activities and pluralist outcomes that are responsive to children’s linguistic and cultural funds of knowledge
Intersubjectivity	Educators take time and care to establish shared clarity of purpose, meaning, process and outcomes with the children
Children’s agency	Educators create situations in which children’s agency is mobilized and supported through co-construction
Multiple modes of expression	Educators use multiple modes of representation to optimise children’s learning being revealed
Visibly, deep listening	Educators listen with all their senses to what children express, to children’s silences and to children’s implied meanings
Inclusion	Educators structure the encounters, so that all voices can be heard, and allow time to reach deeper levels of understanding of children’s learning and capabilities
Trustworthy documentation	Educators include children’s voices in the documentation and cross-check their observations and interpretations with children
Genuine consequence	Educator use the information to plan with children and to consider ways to transform their pedagogic practices

## 11.4 Understanding Children’s Learning and Engagement Through Dialogic Encounters

How educators see children’s capabilities and capacity—and what they notice in this ‘seeing’—are germane to the understandings educators reach about children’s learning and future planning. To further explore this proposition, examples from two projects are explored below, with reference to literacy learning and assessment as a case in point. The projects are:

- The *Children’s Voices Project*, a project that engaged with 350 children to establish their views of their local communities to help inform their state government’s strategic planning (Harris & Manatakis, 2013)
- The *Preschool Literacy in Fiji Project*, a project that engaged with 51 four-to five-year-old children and their families to co-develop community strategies for fostering the children’s literacies in their home languages and English in three communities without access to early childhood education services (Harris et al., 2020).

### 11.4.1 *The Children's Voices Project*

To engage with children about their local community interests and concerns, educators in the Children's Voices Project (CVP) implemented principles of dialogic encounters (as shown in Table 11.1) in ways they judged would work with the children in their respective sites. Educators did not assume that children had the necessary multimodal literacy capabilities for this engagement, nor did they assume the children had none. Instead, educators built on children's existing capabilities and worked in partnership with local artists, musicians and dramatists as they explicitly modelled, scaffolded, enriched and appraised children's capabilities to effectively communicate their community views. For example:

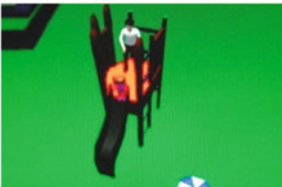
- At an *integrated preschool and rural care service for children birth-5 years*, preschool children participated through visual arts over seven weeks. Children talked with educators about their views of and desires for places, people and events in their community. A local acrylics artist and an oil painter spent time with the children. These sessions saw children enrich their conceptual and procedural tools for visual expression, and scaffolded children's deepening explorations of their community views. Consequently, children's paintings, collages, dioramas and accompanying captions (scribed by educators from what children dictated in their own words) were endowed with clarity and depth of expression of their community views and desires.
- At a *children's centre for children birth-12 years and its Out-of-School-Hours service (OSHC)*, which are services providing a range of supervised recreation and leisure activities for school-aged children in a metropolitan suburb, children participated for an intensive two weeks through dramatic arts and digital animations. Educators collaborated with a local theatre group who engaged with children through music, digital animations, and exploratory, construction and imaginary play. Educators temporarily transformed a room at the centre by replacing children's tables, chairs, shelving and toys with a vast white ground sheet, blank sheets of paper attached to the walls, and scattered mats, pillows, and boxes of various sizes. The purpose was to create a 'magical space' for children to explore new possibilities for their community. These experiences were documented by the educators with the children and brought together in a DVD of the children's digital animations and accompanying commentaries.
- In a *remote family learning partnership program for birth-four-year-olds*, children participated through photography over a four-week period. Educators sent an invitation to children and their families, headed, 'What children say is important.' Children were provided digital cameras by the project. Following a period of exploring and getting to know the workings of the cameras, children took photos in their homes and various indoor and outdoor places in their community, supported by their families and educators. Educators followed children's leads as they worked collaboratively with parents. Educators observed and documented

children’s engagement from exploring how to use digital cameras through to children taking photos and talking about them. Children’s photos provided the basis for conversations with their educators about their community views and desires.

These and other diverse approaches provided rich contexts in which children’s literacies for participation were supported, enacted, documented and assessed. Learning stories behind three texts created by children in the CVP are shown in Figs. 11.1, 11.2 and 11.3. In each account, the child’s literate capabilities and civic (community) insights are revealed and documented through the child’s agentic, multimodal voice expressed in the text s/he created.

<b>Child: Eddie</b>	<b>Date: 11<sup>th</sup> June</b>
<b>Description</b>	
	<p>Eddie made this beautiful image of a garden out of prints. He chose different colours because his grandmothers' gardens are filled with colourful flowers. He made big green leafy patterns for the leaves, and red, yellow and orange shapes for the flowers. He learned how to do this with the help of two artists who visited his centre. This is what Eddie dictated to his educator about his picture:</p>
<p>"Nanna's garden is big and it's fluffy and white. I have a little pumpkin. It is growing. It will take two months to grow or maybe one month. I play throwing and I have a wheelbarrow and shovel. We did actually dig and make holes and try to fill the hole in that I dug last night. I like my motor bike, but I don't ride it at Grandma's garden because it will squish the plants. I share my pumpkin with my Nan and Dad and Mum and George. It's going to be big, like this many, and then I will draw on it a face, and we put a glow thing in it to light it up and go in a competition. Flowers are beautiful and shiny in Grandma's garden. The yellow is Grandma's favourite, they are way down the back, they grow on the tree actually. I saw some bees up in Grandma's greenhouse. They were doing bad stuff. They were making honey for us.'</p> <p>It was with much pride and excitement that Eddie posed for a photo as he held his artwork, and later shared his piece with families and communities when they visited his centre to view their children's works from the Children's Voices Project.</p>	
<b>Interpretation</b>	
<p>Eddie's text is long and rich with description. Before he made his picture, he had spent a lot of time engaged with the two visiting visual artists. His language and literacy capabilities were extended by this experience as can be seen in his descriptive language and sentence structures. He uses a variety of verbs. He projects himself into his story, recalling the things he does in these gardens. He is very observant, and he enjoys what he sees and does in these places. It's as if he's put his readers right into his grandmothers' gardens, showing us what is of value to him in his world.</p>	

Fig. 11.1 Eddie’s learning story

<p><b>Child: Natasha</b></p>	<p><b>Date: 26<sup>th</sup> March</b></p>
<p><b>Description</b></p>	
	<p>Natasha made a digital animation about her local community. These are three stills from her animation. She spent four days working with the visiting theatre group who helped the children create their animations and recorded their talk-over commentaries. Natasha deeply engaged in this activity. In this segment of her animation, she shows us images of her park and what worries her there. This is what she tells us in her spoken commentary:</p>
	<p>'Another place that is scary is the park near my house.'  <i>[Animation shows a large slippery slide near a house.]</i>                  'There are giant slides and they look really scary.'</p>
	<p><i>[Animation pans out and looks down onto the slippery slide from a lofty distance, with a small child and an adult at the top of the slide.]</i>  <i>[Animation then shows the small child falling from the slippery dip, and another child running over to help her.]</i>                  'They should have smaller slides for littler kids.'</p>
<p><b>Interpretation</b></p>	
<p>Natasha makes her view of this park very plain and clear. What makes her message compelling is how she weaves her words together with her images. Her spoken commentary is minimal, but its simplicity is powerful in the message she conveys—interacting as her words do with her imagery and the expression with which she speaks her words. As a literate person, Natasha clearly has understood the civic purpose of her animation text—to convey her views about her local community to decision-makers—and has created such a text in her own multimodal voice to effectively fulfil this purpose with a sense of her own satisfaction in what she had achieved when watching the final product of all the children's animations collated on a DVD.</p>	

**Fig. 11.2** Natasha's learning story

These three children were no exceptions in the CVP. *All* CVP children produced rich texts and deeply engaged as they revealed civic understandings and literate capabilities that had hereto remained invisible to the educators by their own accounts.


<b>Child: Ethan</b>	<b>Date: 18<sup>th</sup> September</b>
<b>Description</b>	
	<p>When the children were asked to draw about what they wish for in their community, Ethan created this calico painting of a rocket ship blasting off. He first drafted this picture on paper with felt pens, then copied it on to a calico square with special art pens. His painting was patched together with other children’s calico paintings to make a patchwork hanging that represents the children’s community views. At first glance, Ethan’s picture is just a rocket ship with flames coming out of its base. It could be interpreted in any number of ways—perhaps Ethan wants a play space station in his community, or something like that. But when the educator spoke to Ethan about his painting, this is what Ethan said:</p>
<p>“I wish everybody, I wish everyone, a healthy and happy community, that is a community that is eco-friendly, an environment that is well looked after where we protect all animals and endangered species. I will be happy, helpful and healthy when looking after my community. My space station will be able to view all the planets in the solar system to make sure they are eco-friendly.”</p>	
<b>Interpretation</b>	
<p>Ethan clearly conveys his concerns with environmental health and protection in his local community and the world at large. He expresses these concerns through his words that his educator scribed. His text is focused and clearly includes language about environmental protection, eco-friendly practices, and people’s responsibility to look after their communities. In saying these things, Ethan communicates his sense of us all being together in the world and the collective responsibility we all share for looking after our world. He links his own taking of responsibility to his personal happiness and health. He was very pleased to have been able to craft this message for his world to hear.</p>	

Fig. 11.3 Ethan’s learning story

### 11.4.2 The Preschool Literacy in Fiji Project

Child-voiced assessment, embedded in dialogic learning encounters, includes engaging with children’s multilingual voices to more fully understand and appreciate children’s capabilities under focus. Child-voiced assessment honours children’s languages and cultures, ensuring that what is assessed and how it is assessed are meaningfully embedded in authentic encounters that are culturally relevant.

Applying principles of culturally relevant pedagogy (CRP) (Ladson-Billings, 1995) to child-voiced assessment ensures that encounters:

- Are culturally responsive, relevant and authentic



- Actively acknowledge and foster children’s cultural strengths to democratize children’s formal education spaces
- Are used to inform how to promote children’s learning, well-being and place in the world
- Convey high expectations for all children to succeed
- Include different cultural ways of knowing
- Affirm children’s cultural identity and belonging
- Promote educators’ and children’s cultural competence (Paris & Alim, 2014, 2017).

Tenets of culturally sustaining pedagogy (CSP) are also germane to how child-voiced assessment is framed in this chapter. CSP support communities’ lifeways disrupted by external forces (Jenkins, 2019)—such as the forces of colonization in Fiji that impacted indigenous Fijian (*iTaukei*) communities and their livelihoods and ways of life with the introduction of the English language and western cultures. In line with CSP tenets, child-voiced assessment:

- Is based on ‘pluralist outcomes that are not centred on White, middle class, monolingual and monocultural norms of educational achievement’ (Paris & Alim, 2014, p. 95)
- Attends to children’s cultural/community practices and knowledges in ways that resist ‘static, unidirectional notions of culture and race’ (Paris & Alim, 2014, p. 95)
- Takes account of children’s traditional languages and cultures in evolving ways as used and lived by children in their contemporary lives (Paris, 2012)
- Uses processes and outcomes whose efficacy contributes to promoting the greater community good for sustaining children’s trajectories and communities’ cultural lifeways (Paris & Alim, 2017).

These CRP and CSP principles were enacted in the Preschool Literacy in Fiji Project, in which dialogic encounters provided contexts for ongoing co-construction of learning and assessment. As an example of this, come inside Kuini’s home and meet Kuini, a four-year-old *iTaukei* (Indigenous) child living with her family in a small, semi-rural village on the main island of Fiji (Harris et al., 2020). Colleague Cynthia (Cindy) Brock, one of the university researchers collaborating on this project, is engaging with Kuini and her aunt and grandmother. Cindy is there to learn about Kuini’s language and literacies practices and capabilities, so that she might plan with the family strategies that support Kuini’s literacies in her home language—Bauan, one of Fiji’s three official languages—and English, Fiji’s official language of schooling, government and media. What happened during this particular encounter and what it revealed about Kuini’s learning and engagement, is shown in Fig. 11.4.

Deeply embedded in Kuini’s cultural world (which can also be carried into a centre or classroom), this encounter revealed key moments of learning and insight as it unfolded. The point at which Kuini declared herself a literate person by referring to her writing is revelatory—and resonates with the other children in this project who came to see themselves as literate as we—researchers, families, other community

Description of the encounter	What we learn about Kuini’s capabilities and engagement through her multimodal voice
<p>Kuini is showing Cindy around her house and yard, along with Kuini’s teen-aged aunt Annette who helped Kuini with her literacy learning. Kuini talks animatedly in Bauan and points to things as they look for ideas for a story to create. They come into the kitchen where Kuini’s Grandma Meli is preparing to make roti (flat bread). Kuini tells Annette in Bauan that she likes to help her grandmother make roti. Annette asks in Bauan, “Would you like to write about that?” Kuini answers, “Yes!”</p>	<p>Kuini is interested in writing a story about her life at home. She takes the search for ideas seriously and is pleased to write about roti-making, an activity she is familiar with and enjoys sharing with her grandmother.</p>
<p>As Grandma Meli makes the roti, Kuini points and describes the steps for making it. Grandma Meli scaffolds Kuini with her Bauan words and her cooking actions. Annette writes down Kuini’s descriptions words while Cindy takes photos of the cooking process. Kuini and Grandma Meli direct attention with their words and gestures to what is happening in each step and what to photograph.</p>	<p>Kuini engages with this familiar activity yet makes it new by providing commentary on the steps so as to explain the process to Cindy. Her Bauan words and gestures are deeply anchored in this activity; and she is aware that photos are important for her book, to show how roti is made.</p>
<p>Here are Kuini’s words for her book:</p> <p><b>[Page 1]</b>  <i>Keirau buli roti kei Bu Mela.</i>                      Grandma Mela and I make roti bread for our family.                      [Goes with photo of Kuini and Grandma Mela at the stove in the kitchen]</p> <p><b>[Page 2]</b>  <i>Matai, tokara na wai me katakata me bali kina na roti.</i>                      First, we boil water and heat the roti plate.                      [Goes with photo of a saucepan of water on a roti plate]</p> <p><b>[Page 3]</b>  <i>Karua, sova rua na bilo falawa qai sova na wai katakata ki na beseni falawa qai sova na wai katakata ki na beseni flour qai bakia me roti.</i></p>	<p>Kuini’s multiliterate text—that is, her text is multilingual and multimodal—voiced by Kuini and scribed by Annette and translated by Annette, reveals Kuini’s literate capabilities in her Bauan home language, for co-creating a coherent procedural text; and for describing steps in a recipe. Her creation of this text has been scaffolded by her engagement and interactions in the roti-making and afterwards by seeing the photos to put them with her words.</p>
<p>Second, we fill a bowl with two cups of flour and add hot water to the flour to make dough. Then we roll the dough into small balls.                      [Goes with photo of this procedure]</p> <p><b>[Page 4]</b>  <i>Ni, oti ya a tekivu me bali saraga na roti.</i>                      Next, we use a rolling pin to roll out the dough.                      [Goes with photo of dough being rolled with a rolling pin]</p> <p><b>[Page 5]</b>  <i>Biuta saran a roti ki na tavutavu ni roti me buta.</i>                      Then, we cook the roti bread on the roti plate.                      [Goes with photo of the roti cooking on the roti plate]</p>	
<p>Kuini decides she would like to continue writing and takes felt pen to paper to draw a picture of making roti. She then orally composes the last page of her book:</p> <p><b>[Page 6]</b>  <i>Niu kana roti jiko, au sa vola sara noqu talanoa niu buli roti!</i>                      Finally, we eat the roti bread while I write about making roti bread!                      [Photo shows Kuini writing on a piece of paper]</p>	<p>Kuini has been and still is fully engaged. She already has sustained her attention on this activity for considerable time, yet she chooses to continue developing the encounter with adults’ support. In giving her book a sense of closure here, it is as if she went ‘meta’ on the process in a particularly insightful moment of self-awareness—indeed, self-declaration—as a literate person.</p>
<p>Kuini wants to continue writing but is unsure what to write about. Annette takes a piece of Kuini’s paper and wrote ‘<i>waga-vuka</i>’ on it, meaning ‘aeroplane’, knowing Kuini has a toy aeroplane that she very much enjoys playing with. Kuini takes the paper on which ‘<i>waga-vuka</i>’ is written and walks into the living room to point to the word on the paper and the toy airplane in the room that the word represents. She then reads the word.</p>	<p>This child-voiced moment reveals Kuini’s understanding of the symbolic nature of spoken and written words for representing objects; and the knowledge that words can be said and read.</p>

**Fig. 11.4** Dialogic encounter with Kuini as she makes roti bread and a book

members—recognized and documented their capabilities and languages through their voices.

In engaging with children’s voices in their home languages, multiple modes of expression were critical. For example, consider four-year-old Taniela, a child living in Kuini’s village. Taniela’s embodied voice was as important as his vocal, written and visual voices in revealing the depth of his learning—as seen in his learning story in Fig. 5. His embodied voice was seen and heard in his movement of a crate to beneath his chart, upon which he climbed and pointed, vocalised and used physical

<p><b>Background:</b> Taniela is with Cindy and his aunt in his home. They have been making an alphabet chart together, based on Taniela’s favourite toys. Taniela has remained fully engaged and interested during a sustained amount of time.</p> <p><b>What happens next:</b> As Cindy finishes her visit for the day, she hears Taniela talking in the background. He has moved a plastic crate under his alphabet chart where it has been hung on a wall, ready to continue the next day. He has climbed onto the crate and is pointing to the pictures he has drawn and saying the name of each picture, the first letter of each picture, and pointing to the first letter.</p> <p>For example, Taniela points to his picture of his bear, says, ‘Bear starts with “b”’, then points to the ‘b’ on his chart. He then retrieves his toy white bear to make the connection complete.</p>	<p><b>What we learn about Taneila’s learning:</b></p> <p>In this small encounter, Taniela has made a significant symbolic journey from his favourite play toy (itself a representation of a real bear), to his drawing of the bear that represents his toy bear, to the word representing his drawing, and the first letter making up that word. In making this journey, he has engaged with spoken and written words translated in Bauan and English in interactions and on the chart.</p>
--	---

Fig. 11.5 Taniela’s learning story

movement to make his abstract connections seen in Fig. 11.5. Noticing children’s multimodal practices such as these is what it means to engage with young children’s voices in assessing their learning and engagement—and revealing the complex way in which children are showing and expressing their awareness of their learning.

## 11.5 Using Child-Voiced Assessment to Transform Pedagogic Practices

Assessment is a powerful tool for transforming pedagogic practices. In the examples explored in this chapter, young children are constructed *and*, as importantly, construct themselves, as capable people with insights, wisdom and capabilities that educators may not have imagined possible until they began engaging with children’s multimodal voices.

To explore transformations that can and do arise from such engagement, I now draw on the Aboriginal Reading Project (Harris, 2021 in press), before returning to the Children’s Voices Project to describe educators’ transformed practices.

### 11.5.1 The Aboriginal Reading Project

Aligned with culturally responsive and sustaining pedagogies previously discussed, the Aboriginal Reading Project (ARP) (Harris, 2021 in press) was a professional

learning program, led by the South Australia Department for Education, for early childhood educators working with Aboriginal children. The program comprised a six-module series of face-to-face workshops led by this chapter's author. The workshops ran over the course of two years in four regional hubs and connected with educators' action inquiries developed around their key learnings.

The project aimed to build educators' capacity for seeing and supporting Aboriginal children as capable readers so that the children could realise their potential as the literate people they were and were becoming. Explicitly valuing Aboriginal knowledges and ways of knowing, ARP explored practices for building on children's cultural strengths to democratize their formal education spaces and foster reading development—ensuring educational practices, including assessment, were authentic and connected children's home, community and preschool/school experiences.

Guided by culturally sustaining pedagogy's demands for pluralist outcomes, the following proposition was explored in workshops:

There is an Aboriginal system of literacy we don't think about. Our children are always judged by a non-Aboriginal system of knowledge. Our children know how to talk, know how to listen ... for Western people, reading is about books and libraries. For Aboriginal people, it is in our head. You can't see it, the library is in our heads [...] Teachers must build upon, rather than replace, the libraries in their heads. (Fleer, 2001, p. 25)

This proposition was linked to Australia's *Early Years Learning Framework (EYLF)* (DEEWR 2009) that framed early childhood educators' work:

There are many ways of living, being and knowing. Children are born belonging to a culture, which is not only influenced by traditional practices, heritage and ancestral knowledge, but also by the experiences, values and beliefs of individual families and communities. (DEEWR, 2009, p. 13)

Yet many educators coming into the ARP reported their deficit views of children's reading and oral language skills, narrowed by the lenses through which they were viewing children and literacy. These views were challenged by ARP's strengths-based approach and sociocultural views of literacies (Gee, 2015) that enabled educators to recognise Aboriginal children's cultural and linguistic resources. These resources were seen to be best revealed and understood through culturally relevant assessment practices that include engaging with children's multimodal voices. Reading was holistically viewed as capabilities related to using texts for social purposes, making meaning, decoding and critically reflecting on texts (Freebody and Luke 2003), situated in and shaped by children's life-worlds and broader cultural and linguistic settings. Germane to child-voiced assessment, ARP promoted educators' engagement in dialogue with children, families and communities in 'yarning spaces' in which educators yarn (talk) up, not down, with Aboriginal children, families and communities in reciprocal, respectful exchanges (Fluckiger et al., 2012).

The stage was thus set for educators to recognize Aboriginal children's capabilities as readers and for educators to open their own minds to what they were not previously noticing as children's competent reading practices. As educators' learning evolved in ARP, and as they engaged more closely with children and their multimodal voices—such as what children said, what they did, places they liked to

spend time in as readers of words and worlds, texts they created and engaged with—educators’ expectations and understanding of children’s capabilities transformed into strengths-based perspectives.

These changed perspectives powered educators’ planning for children’s empowered learning. Educators built on these competences to promote and assess children’s learning in culturally authentic ways. For example, educators engaged in yarning spaces with children and families to:

- Understand, appraise and use Aboriginal children’s funds of knowledge so as to create continuous and culturally relevant and sustaining learning pathways
- Design and appraise reading environments as third spaces (Levy, 2008) that included children’s home and community literacies experiences, thereby encouraging children’s engagement and growth as readers
- Foster and assess children’s oral language in contexts of reading through strategies such as building bridges and seeding discussions (Bremmer & Scull, 2016)
- Engage in conversational reading between educator and children (Sparling & Meunier, 2019).

Upon ARP’s close, educators developed change stories documenting their changed perceptions and practices. Several educators reported that they had once thought that many children in their sites were not readers and were not interested in books. These educators thought the children were more interested in outdoor activities and believed they needed to change their stories and songs frequently if they were to hold children’s interest. In consequence of noticing children’s capabilities and dispositions revealed through their multimodal voices, the educators changed their practices to enhance children’s reader interest and engagement. For example, they:

- rostered staff to read daily to children, individually and in small groups
- created inviting reading spaces for children
- placed books in all learning areas, particularly where the children chose to play
- engaged children with the same text but in many different ways, such as at story tables and through songs and chants, role plays, arts and crafts (South Australia Department for Education, 2019, p. 5).

Following these changes, educators saw the interest children in fact did have in reading. As documented in ARP’s report:

By their own reports, educators found that the children remained engaged when the reading experiences connected in personal and meaningful ways; and purposefully used books that connected with their lives and their play; and saw that re-visiting a text built familiarity [that] could lead to increased enjoyment, creativity and mastery of concepts and language. (South Australia Department for Education, 2019, p. 5)

In another example, many educators brought to ARP their implicit sense that literacy learning is something that happens inside rather than outdoors, and intentional literacy teaching is teacher-directed, explicit and happens at ‘mat time’. However, the ARP saw these educators re-think and consequently they:

- 'Extended print-rich environment to outdoor areas, with signs, maps and writing materials.
- Planned regular reading experiences in communities, such as at local or school libraries, and with Aboriginal student buddy readers.
- Set up story tables inside and outdoors and modelled how to use them. [These tables] included sensory materials.
- Placed books on the floor to read with small groups of children.
- Used open questions, active listening and "I wonder" to invite children to talk more than educators in small groups about what is being read' (South Australia Department for Education, 2019, p. 6).

Engaging dialogically with children in contexts of these changes, educators now saw that:

children can and do engage with books and writing for real purposes; and that Aboriginal children's literacy skills and dispositions improve when an interested adult or older child is present to guide and scaffold learning and be a role model. (South Australia Department for Education, 2019, p. 6)

Transformations such as these not only indicate the power of engaging with children's voices for authentically appraising children's capabilities and opening up pedagogic practices—they also highlight the importance of creating circumstances conducive to children's voices coming through clearly so their capabilities and dispositions can truly be revealed and understood. In this, child-voiced assessment and transformed practices go hand in hand, one continuously informing and enriching the other.

### ***11.5.2 Transforming Practices in the Children's Voices Project***

In the Children's Voices Project (CVP) (Harris & Manatakis, 2013), educators significantly transformed their practices as a result of developing authentic dialogic encounters with children to understand their civic and literate capabilities, views and aspirations. Renewed emphases on educators' roles as observers, listeners, scaffolders, recorders, reflectors and interpreters engaged with children's voices saw these educators transform themselves, as one educator put it, to become 'researchers of our own children'. Indeed, they became researchers *with* children. There were three significant ways in which CVP educators transformed their practices, which are described below.

### **11.5.2.1 Transforming ‘Can Children Do This?’ into ‘Look at What Children Can Do’—Seeing and Making Visible the Competent Child**

By their own reports across all research sites, educators expressed their ‘amazement’ at how children engaged. For example, at a site where children used digital cameras, many for the first time, staff observed children’s familiarization with and explorations of the cameras, which led to their fuller engagement:

The very fact that the children were taking photographs was just amazing. All of us, parents and myself, we were just amazed with what the children did with the cameras. It was incredible just watching them.

Part of valuing children’s competence came from ‘doing with’ rather than ‘to’ or ‘for’ children, and so letting children’s agency do its work in authentic situations in which children’s agency is mobilized and supported. This is a core responsibility of educators as ‘assessors’—to ensure situations in which children are assessed are conducive to educators noticing and appraising children’s full capabilities.

Recognizing children’s competence by engaging with their voices saw educators lift the ceilings they had unwittingly placed on children’s capabilities and potential. For example, a major challenge identified by some educators concerned inclusion of all children who wished to be involved. Educators had expressed concerns in relation to some children’s perceived verbal and non-verbal language development, including autistic children who were involved in these consultations. How could young children and children with special needs be included in ways that elicited their authentic voices and independent perspectives? Yet a site where a local theatre group facilitated engagement with children’s voices through drama, dance and music, an educator noted that one child with ‘communication issues’ had fully participated. At day’s end, he was found lying on a lounge as the theatre people were preparing to leave for the day. He said to them, ‘That was the best day. I hope you are coming back.’

At another site where children, who had been diagnosed with language development delays, were given cameras, an educator reported:

A little laddie who is a high autistic child was very proud of what he did do. He took quite a few photographs of himself and he kept looking at the photo of himself on the camera. Every now and then he would touch himself and say, “That’s me”. That was amazing just watching him look and gaze at his own photograph. His mum and I got quite teary about that point. It was really quite an emotional time. His mum said, “He just realised who he is.” I said, “Yes, that’s what’s happened.”

### **11.5.2.2 Transforming ‘Having Transient Interactions with Children’ into ‘Having Meaningful Conversation with and Amongst Children’—Engaging in Dialogue with the Child**

Educators found they gained insights about their children through sustained active listening and meaningful conversations with children. Children appeared to value

these conversations because they could see that their educators were really interested in what they had to say. There was a genuine give-and-take in these conversations, and there were things educators really did not know because children were the experts on how they viewed their communities.

Smaller groups afforded educators opportunities to interact with children whose voices may otherwise not have been heard, rather than having to respond to the children with the loudest voices. In this, educators discovered anew the power of children's voices, as illustrated in this educator's reflections:

I think there's a great respect, I think it's a very powerful thing listening to children [...] If you really listen, it's amazing what [children] know and what they can do.

What also became evident to educators was that they were now 'really hearing' children's voices and seeing and understanding what children had to say, what they know and can do, what they liked or disliked in relationship to their place and space, and what was important to them. This took time but time was something educators now embraced as friend not foe—they used time to sustain engagement with children and allow for that engagement to ebb and flow as children explored and unravelled new dimensions of knowing and understanding. As one educator commented, 'If we don't take time to do it well, when will we have time to do it over?'

### **11.5.2.3 Transforming 'Recording Observations' into 'Authentic Documentation'—Making the child's Voice Audible and Their Insights Visible**

Documenting children's voices involved educators carefully considering how they were going to accurately record what children were saying at given moments and in particular situations. Some educators recorded 'snippets' around observations, while others developed a recording format. Some recorded on post-it notes or in a notebook as they talked with children, making sure that this documentation focused on the children's words.

Educators worked to remain true to the integrity of children's voices and meanings through a variety of strategies such as helping children to express themselves through further questioning, paraphrasing what children might have meant and checking educators' interpretations with children throughout the process. Clarification with children and breaking down questions for ease of understanding all contributed to educators' attempts to maintain children's voices without prioritizing their own interpretations on what was seen or observed.

Authenticity was a key priority in the way in which educators enacted assessment and documentation, in order to ensure they were representing children's voices in true and accurate ways. Educators made conscious efforts to be true to what children were saying, making sure the words were theirs and not displacing children's intended meanings with educators' interpretations—that is, what educators thought the children meant. Therein lies both strength and challenge in implementing child-voiced assessment—strength coming from assessment being authentically informed



about children's perspectives through their own voices; challenge arising from finding clarity in what children express and cross-checking back with children about what they mean. For example, this educator noted:

Comments children made were in relationship to their own picture, their own interpretations of their artwork [...] We found out interpretations of the children's ideas about their own picture through direct questions or conversations as the child drew the picture, asking why certain things were included.

Not that child-voiced assessment needs to be as intense or demanding as in the CVP. The point here is the need for child-voiced assessment, as one educator put it, 'to maintain the integrity and the voice of the child' as part of day-to-day embedded practice—whether the voice is expressed verbally through spoken or written language, or through imagery and photographs, or through play or embodied expression, or the many other ways children express and reveal themselves.

## 11.6 Key Messages for Educators

This chapter has focused on engaging in child-voiced assessment through dialogic encounters with young children that are part of broader dialogic pedagogies and practices for supporting and promoting children's learning. Child-voiced data, such as presented in this chapter's learning stories, provide rich insights into children's learning, making visible children's learning and capabilities that may otherwise lie hidden—resonating with the argument presented in Chapt. 1 that data are powerful when they disrupt and enlighten previous beliefs and assumptions about children (Timperley, 2005). Child-voiced appraisals of their own learning and engagement can be conveyed as they spontaneously arise and are initiated by children in the course of their activity, such as we saw with Taniela and Kuini. As well, children can be invited to reflect on their learning, such as what children think and feel counts as good work for themselves—such as might be seen in the satisfaction children express in their achievements (as seen in the Children's Voices Project), or which might be prompted by educators asking children about what they think counts as their good work (Ministry of Education, 2004).

Child-voiced approaches to assessment can be time-consuming but, if embedded in participatory, dialogic pedagogies informed by and engaged with children's voices—such as discussed at this chapter's outset and seen in the previous learning stories—then child-voiced assessment becomes embedded in everyday practice. Therein, educators' professional judgments come into play about what to document and when, and how to manage documentation across children in their centre or classroom.

From this chapter, a number of key provocations emerge for early childhood educators' reflection and action on matters such as:

- What place does child-voiced assessment have in your current practices?

- How are your assessment practices situated in and responsive to children's lifeworlds?
- How do your assessment practices actively acknowledge and contribute to sustaining children's cultural strengths and identities?
- To what extent do your assessment practices make visible the competent child?
- How do you use assessment to transform pedagogies that honour children's rights in participatory, dialogic approaches?
- In what ways do your assessment practices engage with children's voices through child-voiced data and child-voiced appraisals of their learning and engagement?

As you reflect on your responses to these provocations, consider how you might go about dialogic encounters with children in ways that enable child-voiced assessment (based on Table 11.1) in ways that are appropriate in your settings. Enacting dialogic encounters with children in situations that are conducive to the assessment focus at hand is important, as is providing materials and activities that are responsive to children's linguistic and cultural funds of knowledge and so allow children's capabilities and potential to come to the fore in ways that align with pluralist outcomes. It is important for educators undertaking child-voiced assessment to take time and care to establish shared clarity of purpose, meaning, process and outcomes of shared activity in which children's learning is being assessed—that way, educators and children can be on the same page of what the shared activity in which assessment is embedded is about. Creating situations in which children's agency is mobilised is consistent with the ethos of engaging with children's voices and is supportive of their learning and engagement that can be and supported through co-construction as appropriate—thereby creating opportunities for children's learning to be assessed in terms of what they can do alone and what they can do with the support of expert others. Make multiple modes of representation available so as to optimise children's learning being revealed, and structuring encounters and opportunities for assessing children's learning in ways that are inclusive, allow time and circumstance to reach deeper levels of understanding of children's learning and capabilities.

Whilst the previous paragraph provides some signposts for educators implementing child-voiced assessment, it is also important to consider educators' own roles as:

- *Listener*: Listen with all your senses to what children express, to children's silences and to children's implied meanings.
- *Observer*: Engage with children's embodied voices by watching what children do, the actions they take, the choices they make, their body language, how they engage with their learning environment and others.
- *Interpreter*: Make sense of what you are learning about children's learning with the children by cross-checking your interpretations back with the children.
- *Recorder*: Include children's voices in their various modes in your documentation that includes photos, video recordings, notes and children's own works and what they say.
- *Reflector*: Use the child-voiced assessment information you gather to plan with children and to consider ways to transform your pedagogic practices.

Considerations such as these are highly important, and critical to how educators' assessment practices envision children and make children's capabilities truly, deeply visible to others. For, in the words of an educator in the Children's Voices Project:

I think there's a great respect, I think it's a very powerful thing listening to children ... we underestimate the power of the under-fives ... If you really listen, it's amazing what children know and what they can do.

## References

- Bremmer, P., & Scull, J. (2016). Teaching young Indigenous literacy learners: Language for literacy. In J. Scull & B. Raban (Eds.), *Growing up literate: Australian literacy research for practice* (pp. 195–221). Eleanor Curtain.
- Carr, M., & Lee, W. (2012). *Learning stories: Constructing learner identities in early education*. Sage.
- Department for Education, Employment & Workplace Reform. (2019). *Belonging, being and becoming: The early years learning framework for Australia*. Author.
- DEEWR. (2009). *Belonging, being and becoming: An early years learning framework for Australia*. Canberra: Author.
- de Sousa, J., Loizou, E., & Fochi, P. (2019). Participatory pedagogies: Instituting children's rights in day to day pedagogic development. *European Early Childhood Education Research Journal*, 27(3), 299–304. <https://doi.org/10.1080/1350293X.2019.1608116>
- Fleer, M. (2001). Literacy learning across cultures. *Every the Child*, 7(1), 24–25.
- Fluckiger, B., Diamond, P., & Jones, W. (2012). Yarning space: Leading literacy learning through family-school partnerships. *Australasian Journal of Early Childhood*, 37(3), 53–59.
- Freebody, P., & Luke, A. (2003). Literacy as engaging with new forms of life: The 'Four Roles Model.' In G. Bull & M. Anstey (Eds.), *The literacy lexicon* (2nd ed.). Pearson.
- Freire, P. (1983). *Pedagogy of the oppressed*. Continuum.
- Gee, J. (2015). *Social linguistics and literacies* (5th ed.). Routledge.
- González, N., Moll, L., & Amanti, C. (2005). *Funds of knowledge: Theorizing practices in households, communities, and classrooms*. Lawrence Erlbaum Associates.
- Harris, P., & Manatakis, H. (2013). *Children as citizens: Engaging with the child's voice in educational settings*. Routledge.
- Harris, P. (2021, in press). Participatory professional learning for supporting young Aboriginal children as capable readers: A partnership approach. In D. Robertson, C. Brock, & L. Hall (Eds.), *Innovation, equity, and sustainability in literacy professional learning*. Guilford Press.
- Harris, P., Brock, C., McInnes, E., Neill, B., Diamond, A., Carter, J., Giannakis, E., Camaitoga, U., & Krishna, M. (2020). *Children's multilingual literacy—Fostering childhood literacy in home and community settings*. Springer.
- Hooker, T. (2019). Using ePortfolios in early childhood education: Recalling, reconnecting, restarting and learning. *Journal of Early Childhood Research*. <https://doi.org/10.1177/1476718X19875778>
- Jenkins, T. S. (2019). Education, community and social engagement. In R. Jeffries R (Ed.), *Diversity, equity, and inclusivity in contemporary higher education* (pp. 69–87). IGA Global.
- Kangas, J., Ojala, M., & Venninen, T. (2015). Children's self-regulation in the context of participatory pedagogy in early childhood education. *Early Education and Development*, 2(5–6), 847–870.
- Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, 32(3), 465–491.

- Levy, R. (2008). 'Third spaces' are interesting places: Applying "third space theory" to nursery-aged children's constructions of themselves as readers. *Journal of Early Childhood Literacy*, 8(1), 43–66.
- McLachlan, C. (2017). Assessment in early childhood education. In L. Meyer (ed.), *Oxford bibliographies in education*. Oxford University Press. <https://doi.org/10.1093/OBO/9780199756810>
- Ministry of Education. (2004). *Kei Tua o te Pae Assessment for learning: Early childhood exemplars*. <https://www.education.govt.nz/assets/Documents/Early-Childhood/Kei-Tua-o-te-Pae/ECEBooklet4Full.pdf>
- Paris, D., & Alim, S. (Eds.). (2017). *Culturally sustaining pedagogies: Teaching and learning for justice in a changing world*. Teachers College Press.
- Paris, D. (2012). Culturally sustaining pedagogy: A needed change in stance, terminology, and practice. *Educational Researcher*, 41(3), 93–97.
- Paris, D., & Alim, S. (2014). What are we seeking to sustain through culturally sustaining pedagogy? A loving critique forward. *Harvard Education Review*, 81(1), 85–100.
- Pascal, C., & Bertram, T. (2016a). Participatory methods for assessment and evaluation. In J. Formosinho & C. Pascal (Eds.), *Assessment and evaluation for transformation in early childhood* (pp. 102–120). Routledge.
- Pascal, C., & Bertram, T. (2016b). The nature and purpose of assessment and evaluation within a participatory pedagogy. In J. Formosinho & C. Pascal (Eds.), *Assessment and evaluation for transformation in early childhood* (pp. 87–101). Routledge.
- Peters, S., Hartley, C., Rogers, P., Smith, J., & Carr, M. (2009). Early childhood portfolios as a tool for enhancing learning during the transition to school. *International Journal of Transitions in Childhood*, 3, 4–15.
- Rinaldi, C. (2012). The pedagogy of listening. In C. Edwards, L. Gandini & G. Foreman (Eds.), *The hundred languages of children: The Reggio Emilia experience in transformation* (3rd ed., pp. 233–246). Praeger.
- Rinaldi, C. (2006). *In dialogue with Reggio Emilia: Listening, researching and learning*. Routledge.
- Roberts, R. (2002). *Self-esteem and early learning*. Sage.
- South Australia Department for Education. (2019). *Accelerating achievement in year 3 reading for Aboriginal learners 2016–17 report*. Author.
- Sparling, J., & Meunier, K. (2019). Abecedarian: An early childhood education approach that has a rich history and a vibrant present. *International Journal of Early Childhood*, 51, 207–216.
- Timperley, H. S. (2005). Instructional leadership challenges: The case of using student achievement information for instructional improvement. *Leadership and Policy in Schools*, 4(1), 3–22. <https://doi.org/10.1080/15700760590924591>
- United Nations. (1989). The UN convention on the rights of the child. <https://www.ohchr.org/en/professionalinterest/pages/crc.aspx>
- Wien, C. A. (2013). *Making learning visible through pedagogical documentation*. Queen's Printer for Ontario.

**Pauline Harris** is Chair, Early Childhood (Research) at the University of South Australia; and Director of the de Lissa Early Childhood and Family Studies Research Community Network. She has internationally recognised expertise in young children's literacies, voices and citizenship. Her research is firmly anchored in children's home, community and formal educational settings across culturally, socially and linguistically diverse contexts, including Indigenous communities. Her research awards include the international Alan C. Purves Award for impact and engagement. The research programme she leads with colleagues and partners in children's voices and citizenship was awarded a high impact rating by the Australian Research Council for the benefits this research has reaped for children, families, educators and others working with and on behalf of young children, at community, state, national and international levels. As lead researcher of collaborative teams spanning Australia, New Zealand, Fiji, UK and USA, she has led development of

new knowledge and methods in: authentic dialogic encounters with young children in and across diverse settings; innovative use of dialogic encounters to develop family- and community-based strategies that foster children's growth as multilingual literate people; socioculturally situated understandings of multilingual literacies and related educational practices; literacies for active citizenship; and culturally relevant and sustaining pedagogic practices that honour and sustain children's cultural heritages and futures in ways that respect traditions while recognising how cultures and languages are lived and evolve in young people's contemporary lives.

# Chapter 12

## Listening to Children's Personal Reflections for Understanding Their Learning Journey



Elizabeth Rouse

**Abstract** Drawing from the national early years learning framework (Department of Education, Employment and Workplace Relations. (2009). *Belonging, being becoming—The early years learning framework for Australia*. <https://www.education.gov.au/early-years-learning-framework-0>). *Belonging, being becoming—The early years learning framework for Australia*. <https://www.education.gov.au/early-years-learning-framework-0>), the Victorian Early Years Learning and Development Framework [0–8 years] identifies as one of five key learning outcomes for children is for them to be confident and engaged learners (Department of Education and Training. (2017). *Victorian early years learning and development framework*. <https://www.education.vic.gov.au/Documents/childhood/providers/edcare/veylframework.pdf>). Assessing is a key aspect of teacher practice; to not only assess children's learning but to inform planning and teaching moving forward. Giving children opportunities to inform adults about their skills and learning is a key principle of assessment in the early years (Clooney et al. in *Assessment of children as confident and involved learners in early childhood education and care: Literature review*. Victorian Curriculum and Assessment Authority. <https://www.vcaa.vic.edu.au/Documents/earlyyears/EYLitReviewLearning.pdf>) and listening to the voices of children provides authentic evidence of children's learning. This chapter presents the findings of a research project, which drew on children's voices to explore the extent to which they were able to assess their learning and describe themselves as competent learners. In this study, children (aged 6–7 years) photographed a self-chosen piece of work they felt showed successful learning. Using this photograph as a springboard in a follow-up conversational interview, they reflected on their learning, how they learnt and how they viewed themselves as learners. The study found that the children were able to confidently reflect on their own learning and themselves as learners.

---

E. Rouse (✉)

School of Education, Deakin University, Burwood, VIC, Australia

e-mail: [l.rouse@deakin.edu.au](mailto:l.rouse@deakin.edu.au)

## 12.1 Introduction

Children are active citizens participating in a democratic life in which they have full rights and responsibilities. The United Nations Convention on the Rights of the Child recognises that children have the right to a voice and to be heard about matters that affect them (UNICEF, 1989). As such, they are informed and responsible global and local members of the community (Education Council, 2019) and *are* looked upon as knowledgeable, competent and powerful members of society (Einarsdóttir, 2005). As democratic citizens, children have the right to be listened to and for their views and experiences to be taken seriously as stakeholders in their own lives (Pascal & Bertram, 2009). They are capable and knowledgeable experts in regard to their own lives, who have their own perspectives and interests (Einarsdóttir, 2005) and considering young children's perspectives is an essential consideration for democratic representation (Colliver, 2017).

This chapter will present the findings drawn from a case study of one school in metropolitan Melbourne, Australia which sought to shift the discourse of learning from a focus on an outcomes-driven approach, to a recognition of children as stakeholders who have a voice and the right to share that voice. Informed by the philosophy and practices underpinning the Italian Reggio Emilia Education Project, the school actively and purposefully remodelled its pedagogical approaches, to adopt some of the underpinning beliefs found in the Reggio Emilia schools and infant settings. Rather than focusing on children in the context of their achievements against a set of benchmarks, the pedagogical focus shifted to children being viewed as informed citizens who are able to make decisions about their own learning and build a learner identity as one of confidence and competence.

Biesta et al., (2009, p. 7) suggest that there is no guarantee that what children learn will be identical to what is taught, but that it is predicated upon the learner's active act of meaning-making. Young children are competent in understanding their experiences and are very capable of expressing these experiences (Smith et al., 2005). Rather than focusing on assessing the children's learning as it related to expected benchmarks and outcomes, or in drawing on children's self-assessment of their learning, this study used the children's own voices to explore the extent to which *they* were not only able to assess their learning, but also the extent to which they were able to assess how they learnt, thus positioning them as competent learners.

The chapter will focus on the use of children's voices through both the use of conversational interviews (Einarsdóttir, 2007) as well as the use of photo imagery (Einarsdóttir, 2005), as a means of enabling children to share their own understanding of their learning and to reflect on what was in place that enabled them to learn. As a means of assessment 'of' learning and 'for' learning, this chapter will argue that the approach taken in this study provided authenticity to the assessment process. Moving beyond the voices of teachers, which is often the case in teacher-led, teacher-designed assessment tasks, to include and prioritise children's voices allows teachers to hear and understand learning from the perspective of the child, enabling them to use this to inform teaching and learning and transform teaching practice (Earl & Timperley,

2008). Enabling children to voice their own understanding of their learning provides authentic data that measures a deeper understanding. The study found that the children were not only able to outline what they had learnt, but as active meaning makers, were able to confidently reflect on their own learning and learner identity.

The chapter begins by examining assessment in early childhood education and care through an examination of recent literature and will also connect with the policy agenda framing assessment in Australian ECEC contexts. The context of the study, which is the focus of the chapter is presented, where the voices of the children are presented as a way of making sense of their self-perceptions regarding their learning. The importance of listening to and drawing on children's voices as an authentic way of assessing learning will be further discussed, in the context of how this led to an understanding of children as learners by the teachers and how this information was used to inform the focus on children's learning in the classroom.

## 12.2 Assessment in Early Childhood Education and Care

There is a broad body of literature that defines and describes the key principles for effectively assessing young children's learning. Cowie and Carr (2004, p. 106) suggest that both competence and competent learners are constructed through assessment as it provides an avenue where individual and collective learning trajectories are navigated and negotiated.

Cloney et al. (2019) undertook a literature review to support early childhood educators to assess children's learning and development, with a specific focus on assessing children as confident and involved learners. Their synthesis of the literature presented a number of key principles which underpin the assessment of children as learners. These include that assessment is conducted in a way that enhances engagement and relationships; includes children's self-assessment; addresses established components of children's learning, enables educators to describe a continuum of learning and involves the child's broader socio-cultural context. A further principle of assessment is that the information gathered is used in ways that are valid, reliable and fair (Killen, 2005, p. 102). Grisham-Brown et al. (2006) suggest that high-quality assessments of young children should be conducted within naturalistic environments and include the use of multiple methods, showing a connection between the intent of the assessment and the way it is being used.

In early years of education, providing children with opportunities to be active participants in the assessment process, should underpin assessment (Cloney et al., 2019) as this realises the agency young children have in their own learning and recognises that they are capable of 'making decisions, informed choices and self-assessing their progress on their choices' (Warash & Workman, 2016, p. 97). However, Brookhart (2018, p. 38) suggests that the role of the child in assessment has often that of a passive 'examinee'. James (2006, p. 11) suggests that assessment of learning needs to take into account not only what a learner knows, but also their understanding of concepts as well as the investigative processes that are central to the 'ways of



thinking and doing'. She goes on to suggest that students' own self-assessments must be central if a key goal of learning is to build learning identities.

Observation has been a primary means of assessment in early childhood settings for a number of years (Cloney et al., 2019; McLachlan et al., 2018). However early childhood educators also employ a number of other types of assessment to monitor children's learning, including learning stories (Carr, 2011), diagnostic tests and developmental checklists (Cloney et al., 2019). Further examples of types of assessment in early years settings include interviews, directed assignments, games, work samples and portfolios (Alaçam & Olgan, 2016).

Portfolio assessment has also been used extensively in early childhood education programmes. Portfolios are the accumulation and curation of the children's work, alongside data from teachers gathered through both formal and informal performance assessments in order to evaluate children's learning and development (Wortham, 2012) and children's learning stories are also included (Mawson, 2011). Portfolios can be shared with others and show children's capabilities and success and children can be actively integrated into the assessment process (Alaçam & Olgan, 2016). However, whilst portfolios can be authentic and children engaged in the process, the analysis presents an inferred voice of the child (Zhang, 2015) and teachers will often take carriage of designing the assessment parameters and organisation (Alaçam & Olgan, 2016).

### ***12.2.1 Authentic Assessment***

'Authentic assessment' as described by Wiggins (cited in Swaffield, 2011, p. 434) is the 'assessment of learning that is conducted through 'real world' tasks requiring students to demonstrate their knowledge and skills in meaningful contexts'. Authentic assessment is performance-based, where the student is assessed through the engagement in meaningful tasks in authentic situations.

In this chapter, however, I use the term 'authentic' to analyse the use of children's voices, not in the definition of authentic assessment described above, but rather to reflect a sense of the assessment approaches undertaken as needing to be 'genuine' (Swaffield, 2011) in eliciting the children's self-reflections of their learner identity. I am suggesting that providing children with opportunities to share their own reflections on their learning and include their voices in outlining their learning provides a genuine insight into not only what they have learnt, but more importantly how they learnt—providing a more authentic understanding for teachers of the learning that has occurred.

### 12.3 The Australian Education Policy Agenda—Successful Learners

A key policy agenda for schooling in Australia is a recognition of the role of education in building a democratic, equitable and just society and that improving the educational outcomes for all students is central to enabling children and young people to live fulfilling and productive lives. The Alice Springs (Mparntwe) Education Declaration (Education Council, 2019, p. 4) has set the goal for all children and young people to become 'confident and creative individuals, successful lifelong learners and active and informed members of the community'. These goals for all Australian children and young people have become manifested within the curriculum documents and guide the practice of teachers.

Early years education in Australia is framed by a number of guiding documents and curriculum frameworks, that at times intersect, whilst at other times stand alone in the way schools navigate curriculum and assessment. 'Early years', in the context of Australian schooling and early childhood education, is used when focusing on children aged between birth and eight years. In a schooling and education context, this includes education and care provision for children from birth to three (often described as infant-toddler programmes) and children aged between three years and five years (referred to as preschool). These programmes are collectively referred to as early childhood education and care (ECEC). Children will transition into their first years of compulsory school education (CSE) around five/six years of age and in the first three years of CSE these early years are usually referred to in schools as the Foundation Years of CSE. At a national level, ECEC-focused services and settings will be guided by a national early years learning framework (EYLF) (Department of Education, Employment and Workplace Development, 2009), whilst CSE is framed by a National Curriculum (Australian Curriculum, Assessment and Reporting Authority, 2016).

In Victoria, where this study was undertaken 'early years' encompasses schooling and learning in ECEC settings as well as the first three years of CSE and unlike other jurisdictions, teachers in these first three years of CSE are working with both a Victorian early years learning framework and the Victorian Curriculum F-10 (Victorian Curriculum & Assessment Authority, 2015a). The curriculum is the common set of knowledge and skills required by students for lifelong learning, social development and active and informed citizenship. Alongside identified subject areas the curriculum also includes a number of cross-curricula priorities and general capabilities. These general capabilities are identified as: critical and creative thinking; personal and social capability; ethical understanding and intercultural understanding. In the Foundation years of CSE (F-year 2) in Victoria, 'schools may choose to structure teaching and learning programmes around the five outcomes of the Victorian Early Years Learning and Development Framework (VEYLDF)' (Department of Education & Training, 2017 p.11), which are identified as: Children have a strong sense of identity; Children are connected with and contribute to their world; Children have a strong sense

of wellbeing; children are confident and engaged learners and children are effective communicators. As complementary documents, the VEYLDF and the Victorian Curriculum both focus on the importance of children being able to consider ways to express and describe thinking activity, including the expression of feelings about learning, both to others and self' (Victorian Curriculum & Assessment Authority, 2015b). This is identified in children's critical and creative thinking-metacognition (Victorian Curriculum & Assessment Authority, 2015a) and also when children are supported to be confident and engaged learners (Department of Education & Training, 2017).

The interwoven context of policy, curricula and learning frameworks provides a complex environment for assessing and reporting on learning for teachers working in the early foundation years of CSE, as is the case for the teachers in this study. Teachers in the state of Victoria are not only required to assess children's learning against the achievement standards and curriculum learning areas, but they are also expected to assess children's learning as it connects with the general capabilities. Additionally, if teachers have incorporated the VEYLDF into their teaching, they will also be assessing and documenting children's learning against the five learning outcomes in this framework.

## 12.4 The Context for the Case Study

This chapter focuses on a case study that sits within a larger research project, undertaken across a number of schools (Foundation—year 7) in Victoria in 2019. This larger study sought to explore the impact for children's learning success through the implementation of a Reggio Emilia-inspired pedagogical approach in a school context with children aged from six to thirteen years. The chapter draws on the data drawn from one of the school sites participating in this larger research project, where children in both Foundation and year one (aged 6–7 years) participated. "Interviews as conversations' (Gollop cited in Einarsdóttir, 2007, p. 200) and the use of children's photography (Einarsdóttir, 2005), were used to gain insights into the way the children saw themselves as learners. The focus on the teacher as a researcher (New, 2007; O'Donoghue, 2011) allowed the research study to be used both as a research project, as well as a means of collecting data that was used to assess the child as a learner and in turn provide insights for future planning.

### 12.4.1 *The School*

The school at the centre of this chapter is an independent girl's school located in inner Melbourne, Victoria, Australia and offers continuous education from preschool through to year twelve. In 2018 the school undertook a major revisioning of its early years classrooms (preschool—year one) to build a purpose-designed learning space

to incorporate many of the features associated with the Reggio Emilia Education Project. These features included a communal space, open plan classrooms and floor spaces where children can work in small groups and independently, a 'piazza' where children meet as a group at the beginning and end of each day, an atelier (large art room), working spaces defined by different levels and low platforms and an outdoor learning space designed to include natural features. The building was multi-story, with each grade level occupying a different floor of the building. The teachers worked in teams across the year levels and the teams included the classroom teachers, specialist maths teachers, specialist visual arts teachers who took on the role of *ateliesta* (a pedagogue who works as a partner in the child's artistic journey) and integration support staff.

Across the early years' section of the school, the pedagogical approaches found in the Reggio Emilia schools and infant-toddler settings have shaped the philosophy, practice and teaching approaches. The key concept guiding this approach is a recognition of the child as a democratic citizen, who, from birth, is viewed as strong, powerful and rich in potential and resources (Rinaldi, 2013). In following Malaguzzi's vision the teachers have sought to create a school 'that is a place of research, learning, revisiting, re-consideration and reflection ... (and which is) designed to bring together the three central protagonists—children, teachers and parents to intensify the interrelationships among them' (Malaguzzi, 1993, p. 9).

### ***12.4.2 The Teachers, Children and Parents and Researcher***

Within this case site, this chapter will focus in on the year one class, which comprised of forty-four children and two generalist classroom teachers who worked together in a team teaching approach, the *ateliesta*, the specialist maths teacher and the integration support staff. The assistant principal, responsible for the operation of this early years section of the school, also undertook the role of the *pedagogista* (Pedagogical Leader). As *pedagogista*, the assistant principal was a key face in the classroom as she would spend much of the time working with the children in small groups and assisting in collection of the pedagogical documentation used by the team to assess learning and develop teaching approaches through the formal pedagogical conversations which occurred weekly.

The pedagogical belief of the teachers in this school is children have an innate desire to discover, learn and make sense of their world. Children are afforded the roles of provocateurs and protagonists, where they have permission to challenge their own ideas and to explore the ideas of others (Hewitt, 2001). Using an inquiry focus, in keeping with what occurs in Reggio Emilia schools, the children engage in 'progettazione'—projects that enable them to explore possibilities and make meaning of their world (Rouse, 2020). Rinaldi writes that 'project work' (*progettazione*) is a dynamic process, a journey that involves the uncertainty and chance that always arises in relationships with others (Rinaldi cited in Moss, 2012, p. 112). The *progettazione* being undertaken by the year one class at the time of the study was a focus on

the attributes of an effective learner and the direction the project had taken was 'persistence'.

The parents and guardians of all the children in the year level ( $n = 44$ ) were sent information regarding the project and seeking permission for their child to be involved in interviews about.... Eight parents provided consent and all eight of these children participated in this phase of the study. As the school was a single-sex school, the children were all girls and aged between six and seven years of age.

It was important in the study that as a researcher wanting to engage with these children that they felt comfortable and confident in making the decision to participate. In the four weeks leading up to the interviews with the children, I spent time each week in the classroom with them working as a co-teacher in order to develop a familiarity and a relationship with the children and they with me. Having informal conversations and sitting with them whilst they were engaged in learning activities across the four weeks, was a means to develop a relationship where they did not see me as an 'outsider' but as someone who was part of their classroom. Establishing this was important so that they were able to acknowledge the researcher's role was not to direct or interrogate but to share their experience (Waller & Bitou, 2011) in a dialogic conversation (White, 2015). Being an experienced early years teacher provided the knowledge and expertise needed to engage with the children in the classroom to build this rapport and to develop a relationship with the children whereby they viewed me as a participant in their learning and their school experience. Children who were reluctant or appeared reluctant to participate were told that if they did not want to participate then they were able to say no or to go back to their classroom and during the conversational interview, I looked closely for signs that may indicate a child was feeling uncomfortable or reluctant so as to discontinue if necessary.

### ***12.4.3 Taking Part in the Study***

Drawing on the work of Einarsdóttir (2005), the children were first invited to take a photo of a piece of work they had been involved in, either by themselves or with other children. The children were invited to photograph a self-chosen piece of work they felt showed successful learning. Using this photograph as a springboard in a follow-up conversational interview, they reflected on their learning, how they learnt and how they viewed themselves as learners. These conversational interviews were individual with the researcher and lasted between five and fourteen minutes. A collection of pieces of work undertaken by the children as the culmination of their unit of inquiry were on display in the central meeting space between the classrooms. Prior to starting their conversation with the researcher, the children were invited to photograph a piece of their work that they wanted to talk about. The photographs were taken using the camera function on the researcher's personal smartphone. The child and the researcher then moved to the library space (piazza) where the child was invited to talk about the photo and why this photo was important. This was further explored by asking the child to share what they had learnt from undertaking this activity, how

doing this activity had helped them to learn and what they learnt about themselves through doing this activity. Ethical approval for the study was granted by Deakin University.

#### ***12.4.4 Interviews as Conversations—Enabling Children's Voice***

Giving status to children's voices acknowledges children's right to be listened to and for their views and experiences to be taken seriously. Listening well to children builds understanding of how children feel about themselves and their lives (Pascal & Bertram, 2009) and children's voices should be treated as worthy of being listened to (Böök & Mykkänen, 2014). Seeing and hearing children express their interests and priorities can provide unexpected insights into their capabilities (Pascal & Bertram, 2009) and, listening to children is a means of challenging assumptions and raising expectations.

However, conducting interviews with children is considerably different to interviews with adults. Children do not have the experience of adults and careful preparation for interviewing children is important. Young children may not know what an interview is or what is expected of them. Their knowledge is also in many cases implicit—that is, they are not aware of what they know and therefore indirect methods are preferable (Einarsdóttir, 2007).

When working with children as research participants it is more helpful to think of interviews as conversation, where children are being listened to, as opposed to being interviewed, providing them with the opportunity to be heard (Gollop cited in Einarsdóttir, 2007, p. 200). As an assessment tool, this is an important distinction, as it positions the teacher as a co-researcher seeking to be partners in the learning. Talking with children directly can be an effective way to access children's perspectives and provide the child's insight into their engagement in learning (Smith et al., 2005).

#### ***12.4.5 Visual Methodologies-Photos to Elicit Children's Voices***

Drawing on Malaguzzi's notion of the hundred languages of children (Malaguzzi, 1993), the use of children's photography provides another 'language' for children to use their voice to share insights into their learning and learner identities for those seeking to understand children's worlds (Lomax, 2020). Photo elicitation is the use of photographs to generate verbal discussion, often used in an interview where the participant is asked to comment on the visual image (Glaw et al., 2017). Photo elicitation, whereby children are in control of the photography, affords children agency in their own lives and how these lives are being interpreted. The data gathering is in

the hands of the children, as they decide what they photograph and what is important to them (Einarsdóttir, 2007). They are able to make decisions about what they want to represent visually and in the case of this study, what they wanted to reveal in the interview (Lomax, 2020).

When children take photographs that are later looked at and discussed in interviews, they are the ones to provide evidence of their own learning, rather than being directed by adults. When these photos are discussed in interviews or dialogic conversations, the children are empowered, as they are the experts. The child is the one who knows about the picture, the reason for taking that picture and through the pictures interprets and explain the photograph (Einarsdóttir, 2005, p. 527). Waller and Bitou (2011) suggest that it is the shared construction of knowledge drawn from the conversations with the children based on their photographs that enable children's meaning and understanding to prevail.

## 12.5 Ethical Considerations

Undertaking research with young children creates a number of ethical considerations. In undertaking this study it was important to not only gain consent from the parents/guardians of the children but also from the children themselves. The UN Convention on the Rights of the Child recognises children's right to participate in decisions affecting their lives and communicate their own views in accordance with their age and maturity (UNICEF, 1989) and this is reflected in the Australian National Statement on Ethical Conduct in Human Research 2007 (updated 2018) which states that consent to a child's or young person's participation in a research project should be obtained from the child or young person whenever he or she has the capacity to make this decision (National Health and Medical Research Council [NHMRC] 2018, p. 66). It was an important consideration in undertaking this study that alongside seeking consent from parents, assent was also gained from each child to participate in the interview and photographing of their work.

As part of children's ongoing assent, it was important that the children felt comfortable in being part of this research and on being with the researcher, not as a participant to be studied, but as an active collaborators in the seeking of understanding. Young children respond in a more positive way to interviewing if the encounter takes place in a familiar environment with trusted adults and maintaining rapport and monitoring the child's comfort is an important aspect of undertaking interviews with young children (Clark, 2005). As mentioned, the children's interviews were undertaken only after the researcher had spent a number of weeks engaging in the classroom with the children and their teachers. When planning the interview, the children's communal library space was selected. This is located adjacent to the classroom and was seen as a space where the children would feel comfortable, but still, be able to engage in a conversation away from their teachers and the learning activities. The interviews lasted between 5 and 15 min to reflect the age and maturity of the child.

A further ethical consideration was the use of the researcher's personal smartphone as the tool for collecting the photo imagery and the child's agency having control and ownership of the photo. Firstly, permission was sought from the school principal to use the personal smartphone and all images were shared with the teachers. These were then uploaded to the researcher's password-protected networked server and deleted from the phone once the interviews had concluded. Additionally, the children themselves were handed the phone and took charge of taking the photos. What photos they took and how many photos they took was their decision and the child then selected the photo they wished to use in the conversation, which was visible to the child whilst they were in conversation with the researcher. At the end of the conversation, the child was asked if they wanted their photo(s) to be deleted. The child was also asked for permission to audio record the conversation so that the researcher could remember what was said.

When including children's voices in assessment of and for learning, many of these ethical considerations apply. As mentioned above, the UN Convention on the Rights of the Child recognises children's right to participate in decisions affecting their lives and communicate their own views. Children have the right to know what the purpose of the interview as conversation is and how what they say is going to be used. Teachers need to ensure that children are given clear and full information by the teacher when adopting these approaches as to what and how their conversation will be used and how this will inform the work of the teacher, as well as the purpose and use of the chosen photo. The child also should have the opportunity to be part of the decision-making process as to when and where the interview conversation will occur so as to feel comfortable to share their own thinking and redistributes the power away from the teacher as the assessor, to a more equal balance in which the child and teacher are co-collaborators in seeking understanding.

## 12.6 What Did the Children Say?

Each of the children selected an example of their work that they were interested in sharing as it reflected their learning and themselves as learners and they used this photo as a springboard for their conversation. All of the children were able to articulate and had a strong understanding of, their own learning and what supports them as learners. Keywords that summarise the way the children described themselves as a learner included: persistent, self-motivated, collaborative, creative, committed, focused, kind and successful.

The progettazione focus of the year one class was on being persistent as a learner. The children were all able to describe not only that they were persistent, but for their future learning, why this is important. Each child was able to articulate why they had chosen that particular learning product to photograph and spoke of how this was an example of them being persistent in their learning. The conversations that emerged in the sharing of the photo enabled the children to reflect on the factors and enablers that support them as learners. Examples of these statements are shared below.



Child 6 spoke about how she was able to learn through the activity of making a chatterbox and how she went about the activity. Whilst she is describing the process of completing the activity, she is also demonstrating her learner identity as she was able to reflect on herself as a thinker and a learner.

'I know it would have numbers and I know it would have questions ... so first I had to think about persisting and then I had to think what my questions were going to be and then I came up with four questions' which she wrote in her plan.

She also suggested that doing a plan was helpful in her achieving her goal because it helped her to know

"what [she] needed to do and how to build it". She learnt that she "had to keep on trying until it folded perfectly".

Child 8 also spoke about her plan which she developed to address the task, but for her, the learning occurred when she had to give up the plan and take on the ideas of others and it is this understanding which is important for her future learning.

"because it wasn't working at all [and] all the girls wanted to change the plan and the plan worked out and then it was a good plan after all".

The children were also able to speak about themselves as risk takers; how they are not afraid of making mistakes.

'Mistakes make me feel okay ... The chatterbox made me think that, because we learn that mistakes are fine' (Child 4).

Understanding the importance of making mistakes as a learner is important to shape the way children will approach learning tasks in the future. Child 5 suggested that making a mistake 'made [her] brain grow' because from making a mistake she now knows 'not to do it'. She believes that having your brain grow is important for learning because 'then you learn more things'.

For Child 3, through engaging with the making of a treasure box, she had to think of ways to problem solve because she was

"thinking of ways to make it stick, then [she] had the idea to put holes in the box and get wire and put it on there".

Child 5 spoke about her learning to keep on trying and not give up, demonstrating not only persistence but resilience in overcoming challenges:

I did learn something. It means you don't give up and you keep on trying ... Because the first time it doesn't work but the 100th time it works. I learnt it took very hard work and still if it didn't work I didn't go, 'Oh man, I don't want to do it anymore'. I just kept on thinking 'what should we add to it?' (Child 5).

The children in this year 1 class were also able to describe themselves as learners who are willing to listen to the ideas of others and articulate why being collaborative supports the individual learner. Rather than being a demonstration of what these children have learnt, this reflection is important for their future learning, as they are able to articulate strategies that they have drawn on in this instance, that can be adopted in future situations. For Child 4:

Working with someone else helps you learn because sometimes both of us make mistakes, or four of us or three. We make mistakes with our words or some things that we forgot what we had to say or something, that's a mistake ... We looked at it and thought, that does not look like our plan, so we keep changing our plan, but it didn't work, so we keep changing and changing and keep adding stuff and adding stuff ... We both worked it out by looking at it, figuring out what was the problem and then we knew what the problem was .... It helped us learn because mistakes are fine (Child 4).

Child 1 attributed her success to working with others who were able to guide and support her, suggesting that:

Vanessa (pseudonym) was teaching us because we hadn't done it before and so she could help us.

The notion of collaborative learning was also important to Child 7.

Working with friends and in a group is a good way of learning because there's a lot you won't learn yourself, but it's good because you're helping others (Child 7).

As a way of understanding her learning and how she learns, Child 2 reflected on how working with others was important for her own learning suggesting that working with others helps you learn because 'they have new ideas to what you have'. For Child 2, working with others enables you:

'to learn about teamwork' which is important for learning because 'we worked together' and 'did different things'. If we just did all of the things we wouldn't have enough time to build, collect and say to ourselves come on you can do it.

Child 6 also spoke about how as a team they were able to both share ideas and agree on ideas:

At first I thought something different to all my team but then we thought that one of the plans was going to be better so we worked out that we were going to choose that one. One of our teammates said count the thing and I didn't say it and that actually made it easier.

As an understanding of what is important for her learning in the future, Child 6 went on to suggest that working with others is important as one person can make a mistake. However, when asked what would happen if the whole team made a mistake, she said that it didn't happen because they:

joined [their] ideas together and thought about the ideas and agreed on a way to move forward. We said yeah maybe and the second part was yes lets do it ... We all thought it was a better idea.

For Child 3, although she spoke about learning to be persistent, when asked what she learnt from engaging in the activity she replied that she 'learnt to be kind' because when one of the other children suggested an idea she 'said it was a good idea'. She then went on to expand on how the activity further supported her to be kind as she wrote cards to help children solve problems that they could read.

Child 2 also suggested that as a learner having choices of learning experiences is important because she wants to be able 'to try different things' and that for her she wants

“to do new choices because you are thinking about it and getting new ideas and you can learn better”.

In describing herself as a learner Child 6 was able to reflect on the influence of others on her own learning. She suggested that she learnt better when she didn't sit with her friends as she could become distracted. She also suggested that she sat with different people which was good because she could 'share ideas' and sitting with different people meant she was not distracted. These insights are important for her future learning, as she is able to reflect on this understanding to create a positive learning situation for herself in the future.

Child 8 reflected on the importance of having fun in the learning because if learning wasn't fun then 'you wouldn't want to go to school'.

## 12.7 What Did We Learn?

*I am a good learner because I listen to the teacher ... I'm clever ... and I try again (Child 8)*

The VEYLDf frames children who are confident and involved learners as those who have positive dispositions toward learning, experience challenge and success in their learning and are able to contribute positively and effectively to other children's learning (Victorian Curriculum & Assessment Authority, 2015a). What the interviews as conversations showed is that as active voices in the assessment, the children in this study were genuinely and authentically able to demonstrate these learning dispositions and reflect on who they were as learners. Rather than just being able to discuss what they had learnt (assessment of learning), the children were able to reflect on how they had learnt and the factors that supported them to be confident learners. Additionally, the children were able to discuss learning in ways that help deepen their knowledge of information and processes to support them in developing their metacognitive skills (Victorian Curriculum & Assessment Authority, 2015a). Metacognition includes a critical awareness of both one's thinking and learning and also oneself as a thinker and learner, where learners are gaining a level of experience 'above the subject matter' (Chick, 2013, p. 1). Chick goes on to suggest that metacognitive skills also involve children thinking about the tasks and contexts of different learning situations and themselves as learners in these different contexts, using this self-assessment for shaping future learning.

These children were initially tasked by their teachers with engaging in an activity that would showcase themselves as being a persistent learners, to be presented at the parent expo. This did enable the children to have a voice in what they were presenting as a way to showcase their learning and provided a mechanism for the teachers to assess and document the children's learning and their learning dispositions. However, what the interviews as conversations enabled was for the children to demonstrate a deeper metacognitive ability to connect with and make meaning, not only in regards what they had learnt and why this learning was important. Through the interview

conversations, they were able to articulate an understanding of the conditions and the context which had enabled them to learn. As a form of assessment, what the interview demonstrated was that these children were able to authentically speak about their learning and how they were able to learn, which would not have been evident or apparent to the teachers without the reflections shared by the child.

Whilst assessment and documentation of learning often draw on the use of photos and at times children do have agency in the taking of these photos, photos themselves are not an informed form of assessment if they are interpreted by the teachers who make assumptions regarding the learning that has occurred and children are placed in the position of passive examinee (Brookhart, 2018). Whilst many early years teachers provide opportunities for children to photograph their work, this is often so that this work can be shared with families or included in a child's learning portfolio. Sometimes this might be accompanied by a narrative that presents the teacher's assessment and analysis of the learning which has occurred. However, for this understanding and analysis to be a genuine assessment not only of learning, but also for learning it is the conversation about the learning—not just what was learnt but how the child learnt and how they see themselves as learners—which is important for teachers to engage in and can be absent when the children themselves are not provided opportunities to share this understanding. When children are able to share documentation that articulates who they are as learners and what has informed this learner identity, they are provided with opportunities to use this self-assessment to be critical of their thinking and learning and also build their identity as a thinker and learner where this can be transferred to other situations and learning contexts (Chick, 2013).

In this study, the photos the children took were not in themselves an assessment tool or a documentation of learning. The child was not a passive examinee but had control of the assessment. The photos that they took were used as a springboard for their interview conversation. Taking the photo empowered the child to speak authentically about their learning, how they learnt and what they learnt in ways that would not have been afforded them if the conversation that the photo enabled did not occur.

As an assessment tool the use of child's voices through their engagement in both the photo elicitation and the interview as conversation, enabled the children to share their own insights into what is important for learning. They were able to articulate not only that it is OK to make mistakes, but that they had permission to make a mistake and that making a mistake is a good thing. As assessment for learning it is these insights which are of most importance if children want to develop positive dispositions for learning. How children view their learner identity informs their future learning. This assessment approach demonstrated that the children had moved beyond intellectualising the notion of making mistakes, to a more authentic understanding drawn from articulating their lived experience and how (and why) this was important. The children's voices also demonstrated their letting go of ideas, the engaging with the ideas of others and the outcomes for success when they enabled this to happen. What became evident in through the interview conversation was that the children could not only articulate the importance of being persistent, taking risks and making mistakes,

but they could move beyond this to reflect on the experiences they had engaged in with their peers and the ‘doing’ of the task, to make a deeper connection that showed a ‘knowing’ rather than just a capacity to articulate what was the outcome of the inquiry. It is this understanding that they can transfer into other learning situations and contexts.

This insight into the children’s learning would not have been apparent if the interview conversations had not occurred and teachers were relying on their own professional judgements about children as learners. Moving beyond the voices of the teachers to include and prioritise children’s voices allows teachers to hear and understand learning from the perspective of the child, enabling them to use this to inform teaching and learning and transform their own teaching practice (Earl & Timperley, 2008). Without the voice of the child sharing their learner identity, the teacher may have been able to observe the children taking on the ideas of others, but what would not have been apparent was why this was important to the child, or what the child learnt from this. It is this latter understanding that is important for future learning. The teachers would have been left to infer the learning, rather than gaining authentic insights from the child’s perspective. This enabled the teachers to use this assessment for their own learning, as they were able to draw on the findings to engage in pedagogical conversations. These shared pedagogical conversations led to informed inferences about the children’s learning to inform their teaching (Department of Education & Training, 2020), enacting the role of teacher as researcher. When assessing children’s learning, teachers often make inferences about the children’s learning and learning dispositions that may not authentically represent the child as a learner as their voice is not present. Children’s experienced realities cannot be comprehended by inference and assumption alone (Pascal & Bertram, 2009). Taking the children’s voices into their pedagogical conversations informed the way the teachers as a group were able to interrogate their own perspectives of the children as learners and add to their understanding of the children as learners. As teacher researchers they engage in a community of inquiry, a re-invention, a continuous journey and a resistance to being reduced to holding a single perspective informing their pedagogy (O’Donoghue, 2011, p. 23).

## 12.8 Conclusion

*The teacher’s thinking is authenticated only by the authenticity of the students’ thinking. The teacher cannot think for her students, nor can she impose her thought on them. Authentic thinking, thinking that is concerned about reality, does not take place in ivory tower isolation, but only in communication.’ ... (Paolo Freire, 2000, p. 77)*

The aim of this chapter was to contextualise the way early years teachers might think about young children’s learning and what it is important to learn. The power of children’s active participation and voice is highlighted. It is suggested that teachers need to explore and re-examine the notion of what it means to be a confident

and engaged learner and the types of assessment approaches that explore the how of learning and what the learning in partnership with children. This chapter has suggested new ways of thinking about assessment, of what is being assessed, how it is being assessed also the purpose of assessment.

The assessment findings provided by these children's voices are a powerful re-imagining of learning and teaching, where teachers are invited to expand beyond the performative nature of teachers' work as responding to the regulatory expectations, to understand what learning is important for young children from the child's perspective. As early years teachers, we need to be actively building an assessment culture that considers children as fully capable of offering valuable insights on the quality and outcomes of their early learning experiences. We need to create a culture that gives young children a voice so as to acknowledge their roles as active citizens in the here and now, already participating in a democratic life in which they have full rights and responsibilities (Rinaldi, 2013).

## References

- Alaçam, N., & Olgan, R. (2016). Portfolio assessment: Does it really give the benefits that it purports to offer? Views of early childhood and first-grade teachers. *Early Child Development and Care*, 186(9), 1505–1519. <https://doi.org/10.1080/03004430.2015.1108970>
- Australian Curriculum, Assessment and Reporting Authority. (2016). *The Australian curriculum*. <https://www.acara.edu.au/curriculum>
- Biesta, G., Lowy, R., & Kelly, N. (2009). Understanding young people's citizenship learning in everyday life: The role of contexts, relationships and dispositions. *Education Citizenship and Social Justice*, 4(1). <https://doi.org/10.1177/1746197908099374>
- Böök, M. J., & Mykkänen, J. (2014). Photo-narrative processes with children and young people. *International Journal of Child, Youth, and Family Studies*, 5(4.1), 611–628.
- Brookhart, S. M. (2018). Learning is the primary source of coherence in assessment. *Educational Measurement: Issues and Practice*, 37(1), 35–38.
- Carr, M. (2011). Young children reflecting on their learning: Teachers' conversation strategies. *Early Years*, 31(3), 257–270. <https://doi.org/10.1080/09575146.2011.613805>
- Chick, N. (2013). *Metacognition*. Vanderbilt University Center for Teaching. <https://cft.vanderbilt.edu/guides-sub-pages/metacognition/>
- Clark, A. (2005). Listening to and involving young children: A review of research and practice. *Early Child Development and Care*, 175(6), 489–505. <https://doi.org/10.1080/03004430500131288>
- Cloney, D., Jackson, J., & Mitchell, P. (2019). *Assessment of children as confident and involved learners in early childhood education and care: Literature review*. Victorian Curriculum and Assessment Authority. <https://www.vcaa.vic.edu.au/Documents/earlyyears/EYLitReviewLearning.pdf>
- Colliver, Y. (2017). From listening to understanding: Interpreting young children's perspectives. *European Early Childhood Education Research Journal*, 25(6), 854–865. <https://doi.org/10.1080/1350293X.2017.1380882>
- Cowie, B., & Carr, M. (2004). The consequences of socio-cultural assessment. In A. P. Anning, J. P. Cullen, & M. P. Fleer (Eds.), *Early childhood education: Society and culture* (pp. 95–106). Sage.
- Department of Education, Employment and Workplace Relations. (2009). *Belonging, being becoming—The early years learning framework for Australia*. <https://www.education.gov.au/early-years-learning-framework-0>

- Department of Education and Training. (2017). *Victorian early years learning and development framework*. <https://www.education.vic.gov.au/Documents/childhood/providers/edcare/veylframework.pdf>
- Department of Education and Training. (2020). *Assessment*. <https://www.education.vic.gov.au/school/teachers/teachingresources/practice/Pages/assessment.aspx>. Accessed October 13, 2021.
- Earl, L., & Timperley, H. (2008). Understanding how evidence and learning conversations work. In L. Earl & H. Timperley, H (Eds.), *Professional learning conversations* (pp. 1–12). Springer.
- Education Council. (2019). *Alice Springs (Mparntwe) Education Declaration*. [https://uploadstoorage.blob.core.windows.net/public-assets/education-au/melbdec/ED19-0230%20-%20SCH%20-%20Alice%20Springs%20\(Mparntwe\)%20Education%20Declaration\\_ACC.pdf](https://uploadstoorage.blob.core.windows.net/public-assets/education-au/melbdec/ED19-0230%20-%20SCH%20-%20Alice%20Springs%20(Mparntwe)%20Education%20Declaration_ACC.pdf)
- Einarsdóttir, J. (2005). Playschool in pictures: Children's photographs as a research method. *Early Childhood Development and Care*, 175(6), 523–541.
- Einarsdóttir, J. (2007). Research with children: Methodological and ethical challenges. *European Early Childhood Education Research Journal*, 15(2), 197–211. <https://doi.org/10.1080/13502930701321477>
- Freire, P. (2000). *Pedagogy of the oppressed*. 30th anniversary ed. Continuum.
- Glaw, X., Inder, K., Kable, A., & Hazelton, M. (2017). Visual methodologies in qualitative research: Autophotography and photo elicitation applied to mental health research. *International Journal of Qualitative Methods*, 16, 1–8. <https://doi.org/10.1177/1609406917748215>
- Grisham-Brown, J., Hallam, R., & Brookshire, R. (2006). Using authentic assessment to evidence children's progress toward early learning standards. *Early Childhood Education Journal*, 34(1), 45–51. <https://doi.org/10.1007/s10643-006-0106-y>
- Hewitt, V. M. (2001). Examining the Reggio Emilia approach to early childhood education. *Early Childhood Education Journal*, 29(2), 95–100.
- James, M. (2006). Assessment, teaching and theories of learning. In J. Gardner (Ed.), *Assessment and learning* (pp. 47–56). Sage.
- Killen, R. (2005). *Programming and assessment for quality teaching and learning*. Thompson Learning.
- Lomax, H. (2020). Multimodal visual methods for seeing with young children. In E. J. White (Ed.), *Seeing the world through children's eyes* (pp. 55–71). Brill.
- Malaguzzi, L. (1993). For an education based on relationships (translated by Lella Gandini). *Young Children*, 49(1), 9–12.
- Mawson, B. (2011). Playcentre parent educators' assessment practice. *NZ Research in Early Childhood Education*, 14, 39–51.
- McLachlan, C., Fleer, M., & Edwards, S. (2018). *Early childhood curriculum: Planning, assessment and implementation* (3rd ed.). Cambridge University Press. <https://doi.org/10.1017/9781108131810>
- Moss, P. (2012). Micro-project and macro-policy: Learning through relationships. In C. Edwards, L. Gandini, & L. Forman (Eds.), *The one hundred languages of children: The Reggio Emilia experience in transformation* (3rd ed., pp. 101–116). Praeger.
- National Health and Medical Research Council. (2018). *National statement on ethical conduct in human research 2007* (updated 2018). file:///C:/Users/rouse/Downloads/national-statement-2018-updated%20(1).pdf
- New, R. S. (2007). Reggio Emilia as cultural activity theory in practice. *Theory into Practice*, 46(1), 5–13.
- O'Donoghue, L. A. (2011). Moving onward: Reflections and re-interpretations of the Reggio approach. *Canadian Children*, 36(1), 20–25.
- Pascal, C., & Bertram, T. (2009). Listening to young citizens: The struggle to make real a participatory paradigm in research with young children. *European Early Childhood Education Research Journal*, 17(20), 249–262. <https://doi.org/10.1080/13502930902951486>
- Rinaldi, C. (2013). *Re-imagining childhood—The inspiration of Reggio Emilia education principles in South Australia*. Government of South Australia.

- Rouse, E. (2020). *Students and learning: the impact of the Reggio Emilia Approach on student success: Final Research Report*. <https://www.researchgate.net/project/Students-and-learning-the-impact-of-the-Reggio-Emilia-Approach-on-student-success>
- Smith, A., Duncan, J., & Marshall, K. (2005). Children's perspectives on their learning: Exploring methods. *Early Child Development and Care*, 175(6), 473–487. <https://doi.org/10.1080/03004430500131270>
- Swaffield, S. (2011). Getting to the heart of authentic assessment for learning. *Assessment in Education: Principles, Policy & Practice*, 18(4), 433–449. <https://doi.org/10.1080/0969594X.2011.582838>
- UNICEF. (1989). *Convention on the rights of the child*. <https://www.unicef.org/child-rights-convention/convention-text>.
- Victorian Curriculum and Assessment Authority. (2015a). *Victorian curriculum F-10: revised curriculum planning and reporting guidelines*. <https://www.vcaa.vic.edu.au/Documents/viccurric/RevisedF10CurriculumPlanningReportingGuidelines.pdf>
- Victorian Curriculum and Assessment Authority. (2015b). *Victorian curriculum F-10*. <https://victoriancurriculum.vcaa.vic.edu.au/>
- Waller, T., & Bitou, A. (2011). Research with children: Three challenges for participatory research in early childhood. *European Early Childhood Education Research Journal*, 19(1), 5–20. <https://doi.org/10.1080/1350293X.2011.548964>
- Warash, B. G., & Workman, M. (2016). Teaching pre-schoolers to self-assess their choices in Pre-K. *Journal of Educational Research and Practice*, 6(1), 97–104.
- White, E. J. (2015). *Introducing dialogic pedagogy: Provocations for the early years*. Taylor & Francis Group.
- Wortham, S. C. (2012). *Assessment in early childhood education*. Pearson.
- Zhang, Q. (2015). The voice of the child in the early childhood education research in Australia and New Zealand: A systematic review. *Australasian Journal of Early Childhood*, 40(3), 97–104.

**Elizabeth Rouse** has worked in the field of education for over thirty years. She has taught in both early childhood settings as well as in schools. Additionally, she has also worked in special education settings, community-based family support programmes and as a policy advisor at both state and local government levels. She has worked in initial teacher education since 2010. She has developed a strong research profile in the area of family–school–community partnerships, which was the focus of her doctoral dissertation. Her publication ‘Partnerships in the Early Years’ (2019, Oxford University Press), framed by her doctoral research, is now a prescribed text in a number of Australian Universities as well as in Europe and North America. More recently, her research has focused on partnerships during transitions within and across education settings.



**Part V**  
**Enhancing Teacher Practice**

# Chapter 13

## Data, Knowledge, Action: The Uses of Data Systems as Auxiliary Tools to Aid Teachers' Thinking About Children's Curriculum Experiences and Teacher Practices



Sue Cherrington, Tara McLaughlin, Karyn Aspden, Lynda Hunt, and Claire McLachlan

**Abstract** The *Data, Knowledge, Action* (DKA) programme of research begins from the premise that access to and use of quality data can enhance early childhood teachers' practices in multiple ways, including assessment for children's learning, pedagogy and relationships with children's families and evaluation of teacher practice. In our work to date in the DKA research programme, we have worked with teachers in seven New Zealand kindergartens across three projects to explore the use of different data systems and tools intended to help teachers gather information to broaden and deepen their knowledge about their pedagogical practices and children's curriculum experiences and learning. Each project has collected data related to specific aspects of practice and children's learning that teachers inquired into. As part of our work to support teachers' inquiries, we also explored and collected data on teachers' experiences, perceptions and shifts in thinking and practice resulting from their engagement with the data systems and ensuing information. In this chapter, we

---

S. Cherrington (✉)

School of Education, Victoria University of Wellington, Wellington, New Zealand  
e-mail: [sue.cherrington@vuw.ac.nz](mailto:sue.cherrington@vuw.ac.nz)

T. McLaughlin · K. Aspden

Institute of Education, Massey University, Palmerston North, New Zealand  
e-mail: [T.W.McLaughlin@massey.ac.nz](mailto:T.W.McLaughlin@massey.ac.nz)

K. Aspden

e-mail: [k.m.aspden@massey.ac.nz](mailto:k.m.aspden@massey.ac.nz)

L. Hunt

Formerly West End Kindergarten, Palmerston North, New Zealand

Ruahine Kindergarten Association, Palmerston North, New Zealand

C. McLachlan

Institute of Education, Arts and Community, Federation University Australia, Ballarat, VIC, Australia  
e-mail: [c.mclachlan@federation.edu.au](mailto:c.mclachlan@federation.edu.au)

provide an overview of the DKA research programme and component projects and describe the key tools and systems used to date. The impact on teachers' thinking about both children's curriculum experiences and their own pedagogical practice through use of these tools is examined.

### 13.1 Introduction

The *Data, Knowledge, Action* (DKA) programme of research is built on the premise that access to and the use of quality data supports early childhood (EC) teachers' practice across multiple aspects of their work, including assessment for children's learning, intentional pedagogy, relationships with children's families and formative evaluation of their practice. In this chapter, we provide an overview of the DKA research and the data tools used in three projects completed to date. The impacts that using these tools has had on the participating teachers in three key areas are then examined: their confidence in using data tools and working with data; their strengthened understandings of children's curriculum experiences; and their reflections on and shifts in their pedagogical practices. The chapter concludes by examining the implications of findings from across these projects, particularly in terms of the policy and professional support required to assist EC teachers to effectively gather and use data to enhance their pedagogy and strengthen children's learning outcomes.

### 13.2 The New Zealand Early Childhood Education Context

Early childhood education (ECE) in New Zealand caters for children from birth through five years of age. While not required to attend school until age six, almost every New Zealand child begins school on—or shortly after—their fifth birthday. Diversity of provision has been a hallmark of the sector with services licensed under three key regulatory umbrellas: teacher-led; parent-led; and whānau (extended family)-led<sup>1</sup> services. Brief details of the main service types are outlined in Table 13.1.

All EC services are required to implement *Te Whāriki* (Ministry of Education, 2017), the national EC curriculum. Built around a framework of five key strands and four overarching principles, *Te Whāriki* contains 17 goals, focused on characteristics of learning environments and pedagogies to guide practice and 20 learning outcomes encompassing the 'valued knowledge, skills, attitudes and dispositions that children develop over time' (Ministry of Education, 2017, p. 22). A whāriki is a woven mat and its use as a metaphor represents the notion that teachers and educators are expected to

---

<sup>1</sup> Whānau is the Māori language word for family. Conceptually, whānau refers to extended kinship links in contrast to the more nuclear family model evident in many Western cultures.

**Table 13.1** Main ECE service types in New Zealand

Service type	Age of children served	Programme provision	Staff	Ownership type
Kindergarten	2–5 years	Primarily school-day sessions	100% qualified, registered EC teachers	Not-for-profit
Education and care	Birth—5 years	Primarily full day	Minimum 50% qualified registered teachers; government policy to lift to minimum 80%	Not-for-profit; owner-operated; corporate
Home-based	Birth—5 years	Full day	1 qualified, registered EC teacher to maximum of 20 caregivers	Not-for-profit; owner-operated; corporate
Playcentre	2–5 years	Primarily half-day sessions	Parents of attending children; parents work towards Playcentre qualification	Not-for-profit
Te Kōhanga Reo	Birth—5 years	Primarily full day	Kaiako (teachers) and Kaiawhina (assistant teachers); need to be competent in te reo me ngā tikanga Māori <sup>2</sup> ; hold or work towards Kōhanga Reo qualification	Marae <sup>3</sup> -based

weave curriculum experiences that are reflective of the local community and responsive to parents' aspirations for their children's learning. The curriculum emphasises a strengths-based approach, focused on children as competent and confident learners and highlighting the importance of formative assessment or assessment for learning. Assessment for learning is primarily undertaken using Learning Stories, a narrative assessment approach developed in New Zealand (Carr, 2001). Initially designed to assess children's developing learning dispositions aligned to the five strands of *Te Whāriki*, Learning Stories aim to capture children's experiences and learning interests and may include contributions from children and their families alongside teachers' assessments (Carr, 2001; Carr et al., 2002).

<sup>2</sup> Māori language and customs.

<sup>3</sup> Traditional Māori meeting place where values and philosophy are reaffirmed.

The endemic use of narrative assessment approaches, primarily Learning Stories, since their introduction in 1999 (Carr, 2001), has seen a reduction over time in the use of other observational techniques and data collection approaches to support assessment for learning and teacher evaluation of their own practice (Cameron, 2018; Mitchell, 2008). The New Zealand Education Review Office (ERO<sup>4</sup>) has also noted the need for services to ‘improve processes for the gathering, analysis and use of information in self review’ (ERO 2009, p. 19), suggesting that there is a need for a stronger focus on the collection and use of data within local service contexts to support assessment, planning and evaluation.

### 13.3 Data-Informed Teaching

Research into the use of data and data-informed teaching is more extensively located within the schooling sector, where it has been positioned both within a data-driven decision-making accountability framing (Gullo, 2013) and as a formative and iterative process that aims to strengthen classroom practice (Hoogland et al., 2016); it is this latter approach that underpins the research reported in this chapter. While multiple definitions of data inquiry and data literacy exist (e.g. Bocala & Boudett, 2015; Gummer & Mandinach, 2015; Jimerson & Wayman, 2015), Schacter and Piasta (2021) noted that early childhood ‘teachers defined data in a practical way as information about children’ (p. 9), including information about their learning interests. Three teacher profiles with regard to data use emerged from their research: teachers who gathered data but did not use it to inform their practice; teachers who primarily gathered and used data informally to inform their ‘in the moment’ (p. 13) interactions; and teachers who integrated multiple data sources into their planning and adaptation of learning experiences to meet children’s individual needs. This variability in teacher practice was also evident in Trawick-Smith et al.’s (2016) study of data-based meetings focused on teachers’ use of maths talk in early childhood settings and in Datnow and Hubbard’s (2015) review of research into school-teachers’ use of data.

The importance of supporting teachers to be able to gather, make sense of and use data to support their planning and pedagogical practices is well recognised (e.g. Bocala & Boudett, 2015; Dam et al., 2018; Hoogland et al., 2016; Skov Hansen, 2018; Trawick-Smith et al., 2016). Such supports include the use of external facilitators and coaches (Hoogland et al., 2016; Marsh et al., 2015), professional learning communities (Marsh et al., 2015; Skov Hansen, 2018) and opportunities for professional learning (Datnow & Hubbard, 2015; Jimerson & Wayman, 2015; Schacter & Piasta, 2021; Trawick-Smith et al., 2016) that enable teachers to build confidence in using data and develop a data culture (Datnow & Hubbard, 2015; Hoogland et al., 2016). Along with being able to identify and use relevant data, Earl and Timperley (2008) note that having an ‘inquiry habit of mind’ and engaging in ‘relationships of

---

<sup>4</sup> The Education Review Office is the statutory body responsible for the external evaluation of all early childhood education services and schools in New Zealand.

respect and challenge’ are critical qualities necessary for teachers to have ‘evidence informed conversations’ (p. 3) that strengthen teacher practice and outcomes for learners.

Beyond these supports, Schildkamp and Poortman (2015) have highlighted characteristics in relation to data (e.g. quality, multiple sources, availability of tools and information management systems), school organisation (such as leadership, training and support and having shared goals) and individuals and teams (knowledge and skills, attitudes and beliefs, collaborating on data use) that influence, either as barriers or enablers, teachers’ use of data. Collaborative and dialogic approaches have emerged as foundational to effective data inquiry and practice (Bocala & Boudett, 2015; Hoogland et al., 2016), with Marsh et al. (2015) noting the importance of horizontal expertise or ‘knowledge that is created through interactions and movement across contexts’ (p. 8) and which occurs through ongoing dialogue. Taken together, data competence and confidence for teachers require a range of professional learning supports and enabling factors and should be embedded within meaningful contexts and aligned with curriculum and assessment values.

### ***13.3.1 The Data, Knowledge, Action Programme of Research***

In this section, the *Data, Knowledge, Action* (DKA) programme of research is presented. This work, as noted above, is predicated on the belief that teachers’ practices across multiple spheres of their work can be strengthened when they are supported to collect and analyse data that provides them with new knowledge about their own practice and about children’s curriculum experiences and learning. In previous writing, we have cautioned against a narrowing of assessment and evaluation approaches (McLaughlin et al., 2020) with one of us (McLachlan, 2018) arguing for a broader range of approaches to be used in order to make valued learning visible. In addition, we have advocated for a stronger focus on intentional teaching (e.g., Cherrington, 2016; McLaughlin & Cherrington, 2018) situated within play-based approaches and where both children and adults might initiate and extend the play (Edwards, 2017). Through its focus on data-informed teaching, the DKA research programme addresses this need to keep a broader view of possible assessment and evaluation tools while supporting a focus on intentional teaching in play-based ECE services.

The DKA programme of research has been led by principal investigator Tara McLaughlin and co-investigators Sue Cherrington, Claire McLachlan and Karyn Aspden. We have partnered with Ruahine Kindergarten Association and worked closely with Lynda Hunt as the lead teacher-researcher across projects. To date, the DKA research programme has completed three projects across five years. Table 13.2 provides an overview of these projects. The first project piloted a number of data tools described below. The fourth data tool, using pedometers to measure children’s levels of physical activity was discontinued in later projects and thus is not discussed here.

**Table 13.2** Data, knowledge, action projects

Project	Timeframe	Focus	ECE services involved	Data tools used
Pilot	April–June 2017	Developing and piloting data systems	One kindergarten team (4 teachers)	CEOS: Observation of child engagement PLAS: Child video Child profiles Child physical activity: pedometers
Teacher-led innovation fund (TLIF)	July 2018–January 2020	Teacher-led inquiry into data-informed teaching in ECE	4 kindergarten teams (18 teachers)	CEOS PLAS Child Profiles
Teaching and learning research initiative (TLRI)	January 2019–June 2021	Exploring sustained shared thinking to deepen young children’s learning	2 Kindergarten teams (8 teachers)	CEOS PLAS Child profiles SSTEW and ECERS-E LENA

Adaptations to tools and additional tools have been developed in the latter projects over time.

Both the TLIF (Ruahine Kindergarten Association, n.d.) and the TLRI (McLaughlin et al., 2022) projects utilised an inquiry approach where teaching teams worked, with our support, to identify inquiry foci and questions related to teaching and learning in their kindergartens. The tools used in each project enabled data to be collected to support teachers as they undertook these inquiries. Three of these tools were project developed: The *Child Experience Observation System* (CEOS; McLaughlin et al., 2018a, 2019), the *Play and Learning Analysis System* (PLAS; McLaughlin et al., 2018b) and the *Child Profiles* (McLaughlin et al., 2018c).

The CEOS tool is a structured live observation based on pre-determined frequency and duration codes focused on children’s engagement within the programme, who they interact with and the nature of those interactions. Observations are undertaken by a trained observer (i.e., teacher-researcher—see Chap. 14) and are recorded on a tablet using observational software. Depending on the inquiry focus, additional frequency codes may be included. Such codes have included types of social play children have engaged in, the nature of teacher–child learning interactions and children’s activities during regular visits to a local nature reserve. Individual children are typically observed for a 2-h period and the resulting data collection file is run through the observational software base programme to generate a summary of the data. Data are then entered into a project-developed Excel™ template to produce a graphed data report for each observation period. Contextual notes can be added to the report to provide additional information as needed.

The PLAS involves either a child or teacher wearing a small GoPro video recorder slotted into a light-weight chest harness worn over their clothing for a 2-h period, capturing video footage from the wearer's perspective and audio from the wearer and those around them. PLAS recordings have been used in two ways with teachers: firstly, viewing short clips that provide opportunities to gain insights into children's curriculum experiences that occur across the programme, whether in the company of teachers and other children or on their own. Given the free-flowing nature of most New Zealand ECE programmes, where children have considerable freedom to make decisions about where they will play and with whom, such clips have enabled teachers to see and understand children's perspectives, interactions and behaviours in previously unseen situations. Video clips taken from the PLAS recordings have also been used to undertake micro-level analyses of interactions between teachers and children, where the moment-by-moment shifts that occur across an interaction are identified and explored by teachers and researchers.

The Child Profile is a teacher-completed tool that prompts teachers to consider children's curriculum experiences, learning and development through a variety of questions and focus areas. Teams can elect to use the full profile or select sections aligned with their inquiry focus. Teachers either complete the profile individually and then discuss within the team or complete it as a collective activity; the key to its effective use is the discussion among teachers about what they know—or don't know – about individual children and teachers' different relationships with and perspectives about a child.

Alongside these three project-developed tools, the third project outlined in Table 13.2 has drawn on externally developed tools: the *Early Childhood Environment Rating Scale Curricular Extension to ECERS-R* (ECERS-E; Sylva et al., 2010), the *Sustained Shared Thinking and Emotional Wellbeing Scale for 2–5-year-olds provision* (SSTEWS; Siraj et al., 2015) and the *Language Environment Analysis* (LENA; LENA Building Brains through Early Talk, n.d.) recording and analysis software. Both the SSTEWS and the ECERS-E are internationally known rating scales that assess curricula provision, pedagogy and environmental resources within EC settings. In the context of our project, SSTEWS and ECERS-E data were gathered by two trained observers and scores and observation summary notes were provided to teachers in graphed and written reports for each observation scale. Observation summary notes highlighted practices observed and areas for growth.

In contrast to education-based tools, LENA has most typically been used to capture the extent of language interactions between children and adults within home settings as part of programmes designed to support children's oral language development in the early years. The LENA system uses an audio recorder worn by the child for up to 12 h (although the maximum period was up to four hours in our project). The recording is then uploaded to software designed to quantify the number of adult words spoken to the child, the number of child vocalisations and the number of adult-child conversational turns throughout the collection period. Data reports showing trends in these variables along with the quality of the audio environment can be created.

Full ethics approval was gained for each of these projects through the second and third authors' university. Informed consent was gained from teachers and from



parents for their children to participate as ‘focus children’ and for video recording. Videos that inadvertently captured footage of children where informed consent had not been given were deleted immediately following the recording. All focus children were asked to assent to wearing the GoPro and LENA devices and could remove these at any point during the observation period.

The CEOS and PLAS data were given to the teachers within 24 h of the observations and video recordings being completed. Regular (one-two times per term) data review meetings were held during which all collected data were shared and discussed by the researchers and teachers. Three members of the research team worked with teachers to unpack and make sense of the data, in relation to individual children or across the group and across the teaching team. The focus of data support meetings changed over time. Initial meetings focused on accurate interpretation of each data source available; creating a space of trust, comfort and respect for data review; and discussing emerging insights and ideas. Later sessions focused on integrating information across data sources, deeper discussions of data and challenging assumptions; or creating data-informed action plans for teacher practice or child learning.

The structure of the two main projects differed in terms of data collection for the teachers’ inquiries. In the TLRI project, the first two authors undertook three cycles of STTEW and ECERS-E observations while the fourth author undertook regular data collection using the CEOS, PLAS and LENA tools in each kindergarten and prepared the resulting data for review by the teams and researchers. In contrast, the TLIF project involved one teacher from each of the four kindergartens acting as a teacher-researcher for another team (see Chap. 14 of this volume). During each kindergarten’s data collection period, their teacher-researcher would undertake the CEOS observations and support the focus child to wear the GoPro. Following the observations, the teacher-researcher would graph the CEOS data and edit the GoPro footage into short clips for later discussion by the teaching team. Ongoing support was provided to the four teacher-researchers throughout the project as described in Chap. 14. This included training on the CEOS codes, graphing data and editing video footage along with support for the leadership roles that they each undertook within their own kindergartens as a result of their deeper data collection knowledge.

### **13.4 The Impact of Tool Use on Teachers’ Thinking and Practice**

Across the three projects, three key themes emerged in relation to teachers’ thinking and practice: teachers’ increased confidence in using data tools and working with data; their strengthened understanding of children’s curriculum experiences; and their reflection on and enhanced pedagogical practices resulting from engagement with data.

### 13.4.1 Increased Confidence in Using Data Tools and Working with Data

Investigation of teachers’ confidence and skill in using data tools and working with data occurred primarily in the TLIF and TLRI projects. In these projects, we used the same pre- and post-project questionnaire to get teachers to rate their level of confidence in working with data and data tools. For this chapter, data from the two projects are combined, rather than reported separately. Teachers were asked to rate how confident they were with six aspects of undertaking inquiries. Data presented in Fig. 13.1 below indicates that at the start of the projects, teachers were less confident with the four steps of *Collect Data, Analyse and Summarise Data, Make Sense of Data* and *Reflection on Practice*. While teachers’ collective levels of confidence went up for all six aspects in the post-project survey, the greatest gains were in those aspects most explicitly focused on working with data.

Qualitative data collected throughout both projects also revealed teachers’ growing confidence with and appreciation of the data that were being collected about their children and their practice. In both projects, most teachers expressed an initial degree of trepidation about their ability to collect and work with data, as the following quote suggests:

We think of data and, oh, making it measurable and you think of those words and statistics and comparing but, yeah, I think like [colleague] said, it was a bit scary at the beginning

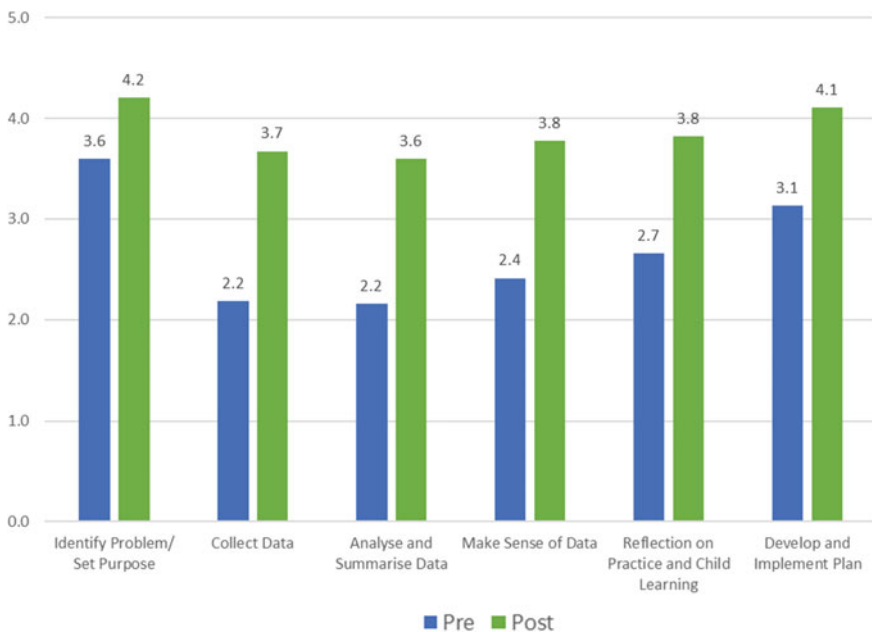


Fig. 13.1 Pre- and post-project surveys: confidence in inquiry processes

and thinking, oh are we really going to be going down that track comparing numbers sort of thing. (TLRI kindergarten focus group)

Not unexpectedly, given the greater demands on them, this initial nervousness was more frequently expressed by the teacher-researchers: ‘For me it was all self-doubt because I can’t do this. It was that lack of confidence and lack of self-belief that actually gave me two steps forward and then I would take one or two back’ (TLIF teacher-researcher focus group). There were, however, some teachers who were ‘excited about what the data will bring’, with one saying, ‘I do love a good graph’ because ‘they focus your thinking’. (TLRI kindergarten pre-project focus group)

Teachers consistently identified that the tools were providing them with new information about children. Typically, this occurred first with the Child Profiles as teachers began working with these early in the projects and were able to complete them without support from a teacher-researcher or the research team. Teachers’ discussions revealed differences in what individual teachers knew about children and where there were gaps in their collective knowledge:

[W]e did the profiles on children individually and then shared as a group and when you actually have to answer questions about that particular child, it made you realise that you actually don’t know as much as what you thought you did about a child.’ (TLIF kindergarten focus group)

These insights were not limited to the Child Profiles. Rather, teachers reported gaining new—and at times, unexpected—knowledge from across all the data sources:

You have a perception of how it is ticking along and what children learn and how they engage and what happens and everyone has that perception about it and you think you know it all ... And then [the] data reveals something and you are like, ‘I didn’t even know that was happening and I couldn’t see that happening’ or ‘that isn’t something I have even considered’. So, that has been really revealing with the whole team. (TLIF teacher-researcher focus group)

Initially, many teachers were unsure how to make sense of the data that they were looking at. As one teacher expressed, ‘I thought I knew what I was looking at but hearing somebody who’s got a lot of experience with interpreting that stuff made me understand it a lot better’ (TLIF kindergarten team meeting minutes). However, as teachers became more familiar with the data tools and with engaging with the data presented to them, meeting notes recorded teachers reporting ‘having a great time with looking at the data. Impacting on every aspect of their practice, including planning and teacher reflections. Having lots of teacher conversations ... Teachers becoming more and more enthusiastic about collecting and using data’ (TLIF Kindergarten, teacher-researcher meeting minutes). Teams experienced *a-ha* moments as they started to make sense of data about their children: ‘All of a sudden, we are like—ding, ding, ding. We could be doing this with him and we need to be doing that with him’ (TLIF kindergarten meeting minutes). Teachers also recognised the value of different data tools and how information gained from each supported them to have a broader understanding of their children:

I think what adds strength to what we see is that we have like the three different tools so we're using the profiles, the graphs and the GoPro. I think if either of them was sitting alone they wouldn't be as robust, you wouldn't see such a holistic view of the child. (TLIF kindergarten team meeting notes)

Data review meetings were held with each teaching team to support them to engage with and understand the data being collected about their children and their own practices. As noted above, during early review meetings members of the research team would scaffold teachers to analyse and make sense of the data and to consider the implications for children's curriculum experiences and learning and for their own teaching. One particular process introduced by the second author was the '*data walk*'. Data walks involved laying out graphed data for each focus child in their kindergarten and looking for patterns across these data. Initial data walks were heavily supported by the research team pointing out key features of the data we could see across children and asking probing questions. In later data walks, teachers were independently identifying trends they saw across children's data:

And the fact that we could actually understand what the data was telling us by that point, whereas at the beginning with our first data walk we were looking at Tara like what, what's she talking about... It's like an alien language, wasn't it at first. (TLRI kindergarten team focus group)

By the end of these projects, teachers were confidently working with data and several teams had identified which tools they planned to embed into their future work to support planning and internal evaluations:

... it was quite funny at the end of this research how we sort of picked the data tools that we were going to use to go with our focussing. That was quite fun. Like actually knowing what we think would work with what we were focussing on. (TLRI kindergarten team focus group)

Other teachers were encouraging their pre-service student teachers to explore using a wider range of observation approaches. One teacher suggested that her student teacher use interval and event recordings, rather than running records as she could get data better targeted to what she wanted to look at and graph the results.

Teachers valued the data collected as part of their inquiries, identifying that it had supported their planning for individuals and groups of children as well as helping them to look more closely at their own practices and how effective these were in supporting children's learning. They recognised that their data may not always give them the answers but may raise more questions that could 'lead to conversations about what might be happening for a child, whether teachers need more data or information, how it might link to planning that had been in place for a child' (TLRI kindergarten data review meeting minutes). Working with the data required that teachers step out of their comfort zone and open their practice up to greater scrutiny than they had previously experienced. However, the benefits were clearly articulated by a teacher who commented at the end of our TLRI project:

We could see over the time ... when we look at those three comparison observations, the shift in practice. It was really like, 'yeah, we have really taken so much onboard and applied it and we, yeah, really stepped up' so that was cool to see those comparisons. (TLRI kindergarten post-project interview)

### ***13.4.2 Strengthening Understanding of Children's Curriculum Experiences***

Alongside building their confidence in using different data tools and working with data, teachers across both projects reported heightened understandings of children's experiences within their kindergartens. The GoPro video recordings were the most powerful data source for this aspect, enabling teachers to gain deep insights into children, particularly their conversations and play with others when they were not in close proximity to teachers, as well as those who needed additional support.

Multiple instances were described where the perceptions that teachers had about individual children were challenged by what they saw in the video-recorded episodes. For example, teachers reported seeing some children take on leadership roles when they had previously viewed them more as followers and were at times surprised by children's confidence and assertiveness when interacting with others. Insights were gained into how children approached new experiences. For instance, one team appreciated how much time and care a child took to observe others during an excursion to a nature reserve before he chose to join in. Having watched this episode, they recognised that the child joined in confidently after carefully observing and they were more alert to him using this strategy back at the kindergarten.

Several episodes were recorded where teachers initially saw children's behaviour as inappropriate; however, as these situations unfolded, teachers' views were recast. In one instance a child tried to rescue a box of cereal his friend had taken from the cooking table and thrown in the rubbish bin. His teachers realised that:

Had we seen the situation without the GoPro, we would have jumped and accused that child of doing what we thought he had been doing. But that GoPro showed us that he does the opposite and tries to prevent it, but he is often the one caught with the ... tipping the Weetbix into the rubbish bin. We would have gone, 'why did you tip that in?' when he was actually trying to pull it out to save them. That really made us think how many times as a teacher, are we jumping to conclusions when we don't actually know? (TLIF teacher-researcher focus group)

Teachers gained greater understanding about individual children's language interactions, particularly those whose language development they had been actively supporting. The video recordings enabled them to hear how much language children were using with their peers and to see the positive impact this was having on their interactions with others. In one episode, a teacher described how 'we have actually realised what complex sentences he is saying and how far he has come' (TLIF teacher-researcher focus group) when talking about a child for whom English was his second language.

Children's use of self-talk or private speech (Vygotsky, 1986) was captured through the GoPro recordings, providing further insights into their thinking and how they managed situations. In the TLIF project, teachers in one kindergarten team described how children used self-talk when on the nature reserve excursions to help them cope with physical challenges: 'oh, I'm scared but I'm being brave' (TLIF

kindergarten meeting notes). Another TLIF team described how one child used self-talk as he prepared to enter play situations. In a later discussion, his father confirmed that would talk with his son about playing with other children each morning on the way to kindergarten.

Finally, the video footage also helped teachers gain insights into those children who typically ‘go under the radar’ (TLIF teacher-researcher focus group) and children who teachers often did not spend a lot of time with during the session. As one teacher commented:

To film a child for [up to] two hours, oh my goodness. That gives you ...it’s amazing what that gives you about a child. You work with these children for a year or two and you think you know them, but you have a two-hour footage and it actually gives you ... when you hear what is being said and how they interact and ... wow, it can really enlighten you. (TLIF teacher-researcher focus group)

### ***13.4.3 Teachers’ Reflections on and Enhanced Pedagogical Practices***

As outlined in the introduction, each of the projects reported on in this chapter has used different data tools to support a different focus, beginning with developing and piloting several tools, supporting teacher-led inquiries and exploring sustained shared thinking to deepen young children’s learning. Despite these different foci, across each project teachers have used the data to reflect on and inform their pedagogies, with different tools offering different prompts and opportunities for reflection. While most reflection was team-based, teachers also found the GoPro video recordings useful for individually reflecting on their own practices:

... the tools have made me think about the ways that I teach and how I can improve on my practice. Because sometimes, yeah, like that’s really important as well to just take a look at how am I doing this, what could I do differently or how can I extend myself as a teacher to support children’s learning. (TLRI post-project focus group)

One of the TLIF teaching teams had focused their inquiry on their programme of weekly visits to a local nature reserve by six children with one of the teachers and a parent. The nature of these visits meant that there were excellent teacher–child ratios and teachers featured frequently in the videos captured by the GoPro worn by an individual child. At the final focus group interview for this kindergarten team, one teacher commented:

I think we all wanted to watch our own full video... We didn’t have to, but it’s fascinating and you never get that opportunity to have nearly a two-hour slot of you and how you interact with one particular child over a length of time. You never get that, that’s valuable, that’s precious. (TLIF kindergarten focus group)

Team discussions and reflections on the data traversed several areas of practice, including the importance of creating space to have team conversations and being more specific about teaching strategies they might use to support children. Analysing their

data helped to create ‘shared understandings amongst teachers ... [and] consistency across the programme’ and teachers were better able to ‘understand what children are talking about when they share experiences undertaken with other teachers’ (TLRI data review meeting minutes). Such consistency of practice was evident in data from a TLIF team’s inquiry which helped them evaluate the effectiveness of a programme they had developed and implemented over several years to support children’s social interactions with others:

We actually saw that on the GoPro that a child had been hurt by another child and there were about four teachers that talked to the child and we all pretty much said exactly the same thing, like the consistency was just incredible. (TLIF kindergarten focus group)

Some GoPro footage was quite confronting for teachers as evidenced in this reflection:

And it also brought out—when you rewatched it—how much you miss when you are one Kaiako<sup>5</sup> with eight tamariki<sup>6</sup> and that focused child might ask you a question, but you are busy engaging with someone else and you miss it. How many opportunities you miss, how much you follow through your length of engagement with that child. I found that quite confronting because I thought I was quite attentive and aware of just eight children, but it was quite confronting to see that there were opportunities there and you can’t attend to every child all the time. (TLIF kindergarten focus group)

In addition to developing greater consistency of practice within teams as a result of building shared understandings, clear shifts in practice were evident across the projects. Two key areas were an increased focus on intentional teaching and strengthening teams’ existing planning and assessment processes. Our data reveal teachers describing how their analysis and discussion of their inquiry data resulted in them being more intentional in both their planned and ‘in the moment’ interactions. Data review meeting minutes noted that teachers ‘feel like they are more conscious of practice as a result of their work this term’ and that ‘they have been more intentional and have made greater use of teachable moments in a consistent way’ (TLRI data review meeting minutes) while teachers also reported in one of the final TLIF kindergarten focus group interviews that ‘having all this data and information has helped us with our intentional teaching strategies’.

Teachers also described being more intentional with their planning for individuals and the wider group:

Our teaching towards those children is a little bit more intentional, you know. Some of them are struggling with friendships and so we are working on that more, aren’t we and identifying those things in our planning for those children. We’ve become more purposeful. (TLIF kindergarten final focus group)

Several teams reported reviewing their existing assessment and planning approaches in order to incorporate ongoing use of some tools. For example, one teacher-researcher described how in her kindergarten, ‘the big ‘wow’ [from the project] has been around planning’ (TLIF teacher-researcher final focus group). They had been trying for a while to improve their planning system and the project had been

---

<sup>5</sup> Teacher.

<sup>6</sup> Children.

a catalyst for developing strong shared understandings for planning along with new planning forms and structures. Such developments were often a ‘work-in-progress’ during the project timeframes, as evident in this extract:

The team has just spent the morning thinking about how to combine everything—planning, child profile, Kaiako goals, work with whānau.<sup>7</sup> Have lots of great ideas but not connecting well yet—spent the morning talking about how to make things manageable as all valuable but current systems are not integrated. Want to continue to use the child profile in future. (TLRI kindergarten meeting minutes)

Teachers also made shifts in their assessment practices, particularly in how they framed their Learning Stories in order to capture more about children’s learning journeys, even where children may not have had initial success:

And writing ... that interest story so, say if they’re trying to do something for the first time, capturing that is actually more important than we used to think ... Because you can say, ‘today I noticed that you da and it’s okay to feel frustrated when ...’ and ‘sometimes learning new things can take a long time and we know ya da ya da’. And then, hopefully in a little bit of time you capture the next story where they’ve done it and their sense of pride in themselves is so rich and it’s not just about that they’ve conquered it, it’s about the whole process that it’s taken. (TLIF kindergarten final focus group)

The impact of such shifts in practice on children’s learning were described by one team who reported that, in addition to planning for and intentionally using language around learning dispositions, ‘children are starting to use dispositional language in their interactions, e.g. ‘If you keep trying, you can do it’ (TLRI team meeting minutes).

Beyond these two key areas of intentional teaching and adapting assessment and planning approaches, teaching teams described shifts in the kind of information that they shared with their primary teaching colleagues when children transitioned to school and using the data collected to evaluate long-standing practices and programmes. Teams also described how the use of the Child Profile sections, such as the section on children’s social-emotional learning, prompted them to re-think what they asked parents about in order to have a better understanding of new children as they began at kindergarten.

## 13.5 Discussion and Implications

Across all our projects completed to date—including the pilot where our emphasis was on developing and trialling tools—we have seen consistent evidence of teachers having deeper and broader understandings of children’s curriculum experiences and learning and of shifts in their own teaching practices as a result of using a range of data tools beyond their usual use of informal observations and learning stories. The nature of the data collected through the various tools is predominantly based

---

<sup>7</sup> Whānau—extended family.



on authentic observations of teaching and learning in context using different lenses or foci. The use of teacher discussion and analysis is critical to making sense of the information available. In many ways, the expanded set of tools has strengthened teacher knowledge of children and supported them to write more detailed or nuanced stories about children's learning.

What teachers learnt about children through the CEOS graphed data often built on existing knowledge but did not always surprise them: teachers could often identify which of their focus children's anonymised graphs they were looking at when first presented at a data review meeting. These graphs did, however, open teachers' eyes to the variability of curriculum experiences across their group of focus children, especially the amount and type of interactions with teachers that children experienced. The CEOS data also provided teachers with clear information on shifts and progressions in children's learning and interactions with others, both children and teachers, within their kindergartens that was less likely to be evident through their existing assessment practices. Both the PLAS and the Child Profile tools were notable for the discrepant data that emerged, with the former providing insights into children's previously unobserved experiences and actions, while the latter highlighted gaps in what teachers knew about their focus children, either collectively or individually. Such discrepant data have been noted for their power in shifting teacher thinking (e.g. Earl & Timperley, 2008; Mitchell & Cubey, 2003) about learning and teaching and this was evident on multiple occasions with our participating teachers. Similarly, data from the ECERS-E and SSTEW observations—particularly the initial observations which provided data about aspects of practice that teachers may not have previously paid much attention to—created opportunities for teachers in our TLRI project to reflect on and reconsider existing practice. Teachers became more intentional in their practice while remaining deeply child-centred in how they planned and enacted curriculum (Edwards, 2017; McLaughlin & Cherrington, 2018).

Our intention with these projects was to explore the use of data tools that would be able to support and strengthen the approaches to assessment, curriculum planning and evaluation used by teachers in New Zealand, rather than to reject and replace existing approaches. The prevalence and utilisation of the learning story approach have been critiqued (e.g., Cameron, 2014, 2018; Wanoa & Johnstone, 2019) with many learning stories written in response to spontaneous events or episodes, rather than drawing on intentionally undertaken observations or being related to previous assessment data. Our findings revealed how teachers drew on the new (to them) data tools and their enhanced understandings to strengthen their learning story assessments: they wrote more detailed narratives and paid greater attention to children's learning progress within their zone of proximal development while retaining a strong child-centred stance. Similarly, existing approaches to planning and evaluation were adapted by teaching teams to integrate the ongoing use of one or more of the tools or inquiry processes we had offered. Interestingly, different data tools 'spoke' to and were integrated into existing processes by different teams. Which tools were chosen reflected the impact of the often discrepant data on teachers' perceptions and thinking, as well as how teams perceived they could continue their use of the tools without the external support provided by the research. Thus, teachers in our study

saw value in tools that disrupted their thinking and provoked reflection but could also be readily integrated into practice.

While our CEOS tool utilised tablets to record observation data and software to support the graphing and presentation of these data, the frequency and duration observation techniques used can be simply gathered by teachers using more traditional pen and paper methods. While such straightforward observations have fallen out of use within the New Zealand ECE context, we note—and concur with—Trawick et al. (2016) finding that data collected in situ using such simple observational approaches and shared with teachers can have a positive impact, both on their practice and on children's learning.

In parallel with the wider literature on effective data use by teachers (e.g., Schildkamp & Poortman, 2015), we identified a number of supports that contributed to teachers being able to develop confidence and capability in collecting, making sense of and using data to support their assessments, planning and evaluation. The first two authors acted as critical friends facilitating the projects and, with the fourth author, supported the teaching teams and teacher-researchers throughout their inquiries. Such external facilitation has also been found to be important in similar data-use projects in both early childhood (Skov Hansen, 2018) and schooling (Marsh et al., 2015) contexts. Providing support with the collection and preparation of data for teaching teams was a key support undertaken by the fourth author across each project, along with the teacher-researchers in the TLIF project. This support reduced the time and cognitive demands on the teaching teams, freeing them up to focus on making sense of and using the data in their inquiry projects and in their assessments and planning. As teams developed confidence with the different data tools used, they were able to consider how they might use these independent of external supports (other than their teacher-researchers) beyond the projects.

Collectively across the projects, an important support was the financial resourcing that created time and space for teachers to meet with members of our research team to plan their inquiries, learn about the tools, engage with and make sense of data and implement their inquiry and curriculum plans. We were able to scaffold teachers' introduction to the tools and to making sense of data through regular planning and data review meetings for each team. In addition, our teacher-researchers in the TLIF project were supported through a more intensive programme (see Chap. 15) that included a mix of planned and 'just-in-time' knowledge to support them to use the CEOS codes, graph data and edit the video footage for their partner kindergarten team.

Leadership has been identified as having the potential to act as either an enabler or a barrier to teachers developing confidence and skill in using data (Datnow & Hubbard, 2015; Hoogland et al., 2016; Marsh et al., 2015; Schildkamp & Poortman, 2015). In our projects, supportive leadership within each kindergarten team and from the overarching kindergarten association facilitated teachers' sustained engagement and success with their inquiry projects. The teacher-researchers also took on an important pedagogical leadership role within their own kindergartens, using their deeper knowledge of the data tools to support their teammates, particularly around making sense of the data that each tool could produce.

Our findings across the three projects undertaken so far within the DKA programme of research highlight a number of implications for both policymakers and the ECE sector if teachers are to be empowered to use a range of different data systems to effectively collect, analyse and use data that supports children's learning and strengthens teachers' pedagogical practice. Foremost among these implications is the need for initial teacher education programmes and ongoing professional learning opportunities to support teachers' knowledge of and confidence with using data to support their formative assessment, planning and evaluation practices. The availability of external support people able to support teachers in using a range of tools and approaches and in developing systems that work in their local settings is a key element in this professional learning.

In this respect, the DKA research programme focuses on the collection of data and the use of data systems that support improvements in teaching and learning in the local context (Datnow & Hubbard, 2015; McLaughlin et al., 2020) rather than for teachers to gather data that will be aggregated and used to make summative judgements about the quality of learning and teaching at the service, organisational or national level (Gullo, 2013). The effective use of data to inform teaching and learning at a local, service-based level requires that teachers have sufficient time and space to collect, make sense of and discuss data. The collaborative and dialogic nature of effective data use (Bocala & Boudett, 2015; Hoogland et al., 2016; Marsh et al., 2015) suggests that creating non-contact space for teaching teams to regularly meet together is an important component. Currently, New Zealand ECE services vary considerably in the amount of non-contact time available to staff, either as individuals to collect and analyse data or for team meetings to discuss collective findings. This variability creates potential for inequitable outcomes for children, dependent on the time their teachers have available for data gathering and evidence-informed conversations (Earl & Timperley, 2008).

Finally, we note the importance of leadership—at the organisational, service and pedagogical level—as a characteristic that can either support and enhance teachers' engagement with and use of data or act as a barrier against such engagement. Leaders play a key role in the development of a culture that values using data appropriately and in the creation of time and space that enables such a culture to flourish. However, strong and effective leadership is also supported and enabled by effective government leadership policies that support effective leadership, including the provision of professional learning opportunities for existing and potential leaders.

In summary, the *Data, Knowledge, Action* programme of research has worked with teachers to explore the premise that access to and use of authentic data can enhance early childhood teachers' practices in multiple ways. We have paired this focus on access to and use of data with the professional support needed for effective data use, including supporting teachers to develop data literacy skills and modify data systems to work within their local contexts. Our findings suggest the use of new data tools paired with data supports can be transformative for teachers. We acknowledge the range of supports and resources made possible by funded projects, such as our TLIF and TLRI and encourage further research to explore the multiple pathways to building a culture of data use in a range of early learning service types.

**Acknowledgements** The authors wish to acknowledge the funding received for two of the projects described in this chapter: *The Teacher-Led Innovation Fund* and the *Teaching and Learning Research Initiative* fund. Findings and teacher quotes have been used with permission by the project team. Further details of these projects may be found in the final project reports:

Hunt, L., McLaughlin, T., Cherrington, S., Aspden, K. & McLachlan, C. (2020). *Data, knowledge, action project: A teacher-led inquiry into data-informed teaching in early childhood education, Final Report*. Teacher-Lead Innovation Fund (TLIF) project led by the Ruahine Kindergarten Association, 2018–20. Report accepted by the MOE in February 2020.

McLaughlin, T., Cherrington, S., McLachlan, C., Aspden, K., Hunt, L. & Gifkins, V. (2022). *Data, knowledge, action: Exploring sustained shared thinking to deepen young children's learning. Teaching and Learning Research Initiative End of Project Report*. NZCER.

## References

- Bocala, C., & Boudett, K. P. (2015). Teaching educators habits of mind for using data wisely. *Teachers College Record*, 117, 1–20.
- Cameron, M. (2014). Keeping learning stories complex: A call for ongoing critique. *Early Education*, 55, 30–31.
- Cameron, M. (2018). *Assessing four-year-old children's learning: New Zealand early childhood teachers' purposes, practices and beliefs (Doctor of Education thesis)*. Massey University.
- Carr, M., May, H., Podmore, V., Cubey, P., Hatherly, A., & Macartney, B. (2002). Learning and teaching stories: Action research on evaluation in early childhood in Aotearoa-New Zealand. *European Early Childhood Education Research Journal*, 10(2), 115–125. <https://doi.org/10.1080/13502930285208991>
- Carr, M. (2001). *Assessment in early childhood settings: Learning stories*. Paul Chapman.
- Cherrington, S. (2016). Early childhood teachers' thinking and reflection: A model of current practice in New Zealand. *Early Years*. <https://doi.org/10.1080/09575146.2016.1259211>.
- Dam, M., Janssen, F.J.J.M., & van Driel, J.H. (2018). Making sense of student data in teacher professional development. *Professional Development in Education*. <https://doi.org/10.1080/19415257.2018.1550104>.
- Datnow, A., & Hubbard, L. (2015). Teachers' use of assessment data to inform instruction: Lessons from the past and prospects for the future. *Teachers College Record*, 117, 1–26.
- Earl, L.M. & Timperley, H. (2008). Understanding how evidence and learning conversations work. In L.M. Earl, & H. Timperley (Eds.). *Professional learning conversations: Challenges in using evidence for improvement*. Springer.
- Education Review Office. (2009). Implementing self review in early childhood services. Author.
- Edwards, S. (2017). Play-based learning and intentional teaching. Forever different? *Australasian Journal of Early Childhood*, 42(2), 4–11.
- Gullo, D. F. (2013). Improving instructional practices, policies, and student outcomes for early childhood language and literacy through data-driven decision making. *Early Childhood Education Journal*, 41, 413–421.
- Gummer, E. S., & Mandinach, E. B. (2015). Building a conceptual framework for data literacy. *Teachers College Record*, 117, 1–22.
- Hoogland, I., Schildkamp, K., van der Kleij, F., Heitink, M., Kippers, W., Veldkamp, B., & Dijkstra, A. M. (2016). Prerequisites for data-based decision making in the classroom: Research evidence and practical illustrations. *Teaching and Teacher Education*, 60, 377–386.
- Jimerson, J. B., & Wayman, J. C. (2015). Professional learning for using data: Examining teacher needs and supports. *Teachers College Record*, 117, 1–36.
- LENA Building Brains through Early Talk. (n.d.). *Language environment analysis (LENA) technology*. <https://www.lena.org/>.

- Marsh, J. A., Bertrand, M., & Huguette, A. (2015). Using data to alter instructional practice: The mediating role of coaches and professional learning communities. *Teachers College Record*, *117*, 1–40.
- McLachlan, C. (2018). *Te Whariki* revisited: How approaches to assessment can make valued learning visible. *He Kupu*, *5*(3), 45–56.
- McLaughlin, T., & Cherrington, S. (2018). Creating a rich curriculum through intentional teaching. *Early Childhood Folio*, *22*, 33–38.
- McLaughlin, T., Cherrington, S., McLachlan, C., Aspden, K., & Hunt, L. (2018a). *Play and learning analysis system*. Unpublished instrument.
- McLaughlin, T., Hunt, L., Cherrington, S., Aspden, K., & McLachlan, C. (2018b). *Child profile*. Unpublished resource.
- McLaughlin, T., Hunt, L., Cherrington, S., Aspden, K., & McLachlan, C. (2018c). *Child experience observation system*. Unpublished instrument.
- McLaughlin, T., Hunt, L., Cherrington, S., Dodge, T., Hildred, S., Stanley, C., and the Data Knowledge Action Project (2019). *Data knowledge action social engagement and interaction codes*. Unpublished instrument, Institute of Education, Massey University, Palmerston North, New Zealand.
- McLaughlin, T., Cherrington, S., McLachlan, C., Aspden, K., & Hunt, L. (2020). Building a data culture to enhance quality teaching and learning. *Early Childhood Folio*, *24*(2), 3–8. <https://doi.org/10.18296/ecf.0080>.
- McLaughlin, T., Cherrington, S., McLachlan, C., Aspden, K., Hunt, L., & Gifkins, V. (2022). *Data, knowledge, action: Exploring sustained shared thinking to deepen young children's learning*. Retrieved: [http://www.tlri.org.nz/sites/default/files/projects/TLRI%20Summary\\_McLaughlin.pdf](http://www.tlri.org.nz/sites/default/files/projects/TLRI%20Summary_McLaughlin.pdf).
- Ministry of Education. Te Tāhuhu o te Mātauranga. (2017). *Te Whāriki. He whāriki matauranga mō ngā mokopuna o Aotearoa: Early childhood curriculum*. <https://www.education.govt.nz/early-childhood/teaching-and-learning/te-whariki/>.
- Mitchell, L. & Cubey, P. (2003). *Characteristics of professional development linked to enhanced pedagogy and children's learning in early childhood settings: Best Evidence Synthesis*. New Zealand Ministry of Education.
- Mitchell, L. (2008). *Assessment practices and aspects of curriculum in early childhood education. Results of the 2007 NZCER national survey for ECE services*. New Zealand Council for Educational Research.
- Ruahine Kindergarten Association. (n.d.). *TLIF Project: 4–016. Data, knowledge, action: A teacher-led inquiry into data-informed teaching in early childhood education*. Retrieved from: [https://www.educationcounts.govt.nz/publications/schooling2/workforce/tlif-teacher-led-innovation-fund/teacher-led-innovation-fund-tlif-project-summaries-2018/ruahine-kindergarten-association-tlif-4-016-data,-knowledge,-action-a-teacher-led-inquiry-into-data-informed-teaching-in-early-childhood-education/\\_nocache](https://www.educationcounts.govt.nz/publications/schooling2/workforce/tlif-teacher-led-innovation-fund/teacher-led-innovation-fund-tlif-project-summaries-2018/ruahine-kindergarten-association-tlif-4-016-data,-knowledge,-action-a-teacher-led-inquiry-into-data-informed-teaching-in-early-childhood-education/_nocache).
- Schacter, R.E. & Piasta, S.B. (2021). Doing assessment: A multicase study of preschool teachers' language and literacy data practices. *Reading Research Quarterly*, 1–21. <https://doi.org/10.1002/rrq.419>
- Schildkamp, K., & Poortman, C. (2015). Factors influencing the functioning of data teams. *Teachers College Record*, *117*, 1–42.
- Siraj, I., Kingston, D., & Melhuish, E. (2015). *Assessing quality in early childhood education and care: Sustained shared thinking and emotional well-being (SSTEWS) scale for 2–5-year-olds provision*. UCL IOE Press.
- Skov Hansen, L. (2018). Data- and research-informed improvement work in ECEC. *Journal of Educational Leadership, Policy and Practice*, *33*(1), 70–81.
- Sylva, K., Siraj-Blatchford, I., & Taggart, B. (2010). *ECERS-E: The early childhood environment rating scale curricular extension to ECERS-R*, 3rd Ed. UCL IOE Press

- Trawick-Smith, J., Oski, H., DePaolis, K., Krause, K., & Zebrowski, A. (2016). Naptime data meetings to increase the math talk of early care and education providers. *Journal of Early Childhood Teacher Education*, 37(2), 157–174. <https://doi.org/10.1080/10901027.2016.1165762>
- Vygotsky, L. S. (1986). *Thought and language* (A. Kozulin, Trans.). The MIT Press.
- Wanoa, L., & Johnstone, M. (2019). How the Learning Story framework can be enhanced to provide better assessment information to support planning for children’s further learning: A critique of the reliability and formative validity of Learning Stories in Aotearoa New Zealand. *New Zealand Annual Review of Education*, 24, 90–104.

**Sue Cherrington** is an Associate Professor in the School of Education and is Director of the Institute for Early Childhood Studies at Victoria University of Wellington. She has an extensive background in early childhood education, as both a kindergarten teacher and in early childhood teacher education. Her overarching research focus is on professional and pedagogical practices in ECE. Within this broad focus, her research concentrates on EC teacher thinking and reflection, including the use of video to support collective thinking and reflection; teacher professional learning and development, particularly through professional learning communities (PLC) and the evaluation of professional development programmes for EC practitioners; teachers’ ethical and professional experiences and practices; teachers’ professional and pedagogical responses to working with diverse children and families; and investigation of the use of innovative data collection tools for use by teachers in ECE settings. She has developed methodological expertise in the use of video stimulated recall methods within educational settings.

**Tara McLaughlin** is a Senior Lecturer in Early Years Education and the founder and director of the Early Years Research Laboratory in the Institute of Education at Massey University. Prior to this appointment, she was a Research Scientist at the University of Florida in the Anita Zucker Center for Excellence in Early Childhood Studies. As a teacher, teacher educator and researcher in Early Years, she is committed to supporting learning environments that promote diverse and equitable opportunities for all children and families. She maintains an active research programme in range of topics related to early learning supports and services for young children, including children with disabilities, their families, and the teachers and specialists who serve them. Her research focuses on inclusive high-quality early intervention and early childhood education. Key focus areas include exploring (a) evidence-based, intentional and social–emotional teaching practices; (b) assessment and data-informed teaching; and (c) innovative professional learning and development. Her research uses an eclectic mix of research methods including statistical techniques and a focus on measurement quality in educational research. She is currently the lead investigator in the data, knowledge, action projects, funded by the Teacher Led Innovation Fund (TLIF) and Teaching, Learning, Research Initiative (TLRI).

**Karyn Aspden** is a Senior Lecturer in Early Years Education in the Institute of Education at Massey University. She began her career as a teacher and leader in a range of early childhood services, before moving into initial teacher education. She is Programme Coordinator of the Graduate Diploma of Teaching (ECE). Her teaching areas include leadership in early childhood education, studies of infants and toddlers, professional practice and early intervention. She is passionate about supporting both student teachers and experienced teachers to enhance their professional skills and knowledge, to be effective, informed and intentional teachers of young children. Her research interests include practicum, effective teaching practice, early intervention and infant and toddler pedagogy. The importance of meaningful and responsive relationships is the thread that weaves through each of these areas.

**Lynda Hunt** is recently retired from a lengthy career as a kindergarten teacher in Aotearoa New Zealand. She has worked for many years for the Ruahine Kindergarten Association, including being the head teacher of West End Kindergarten for over 10 years. She was also the lead teacher researcher for the Data Knowledge Action projects reported in this volume, in which role she mentored teachers to become researchers in their own setting and she gathered and analysed a significant amount of data. She has also been involved in other research projects with colleagues at Massey University.

**Claire McLachlan** is Executive Dean of the Institute of Education, Arts and Community at Federation University Australia. This role involves leadership of the Institute across six regional campuses in Victoria. Prior to this appointment, she was Dean of the School of Education at Federation, Head of School for Te Hononga, the School of Curriculum and Pedagogy in the Faculty of Education, University of Waikato, and Professor of Childhood Education at Massey University, where she taught courses on languages, literacies, cognition, pedagogy, assessment and evaluation. She has also supervised over 60 HDR students, including ten doctoral completions to date. She has published 9 books, has over 200 research outputs, and has received over \$6 million in research and consultancy funding. Her primary field of research is early childhood education, and her platform of research is focused on literacy, physical activity, curriculum, pedagogy, assessment and evaluation. In addition to personal research, she has undertaken wide ranging evaluation research for three government Ministries in New Zealand; and internationally, she has provided consultancy for the Semarang State University (UNNES) in Central Java, Indonesia and the New Zealand Ministry of Foreign Affairs for education in Tokelau. She is currently Deputy President of the Victorian Council of Deans of Education, the Victorian representative on the Australian Council of Deans of Education, a member of the UNESCO-IBE Early Reading Panel, the New Zealand Ministry of Education Early Childhood Research Policy Forum and the Australian Centre for Policy Development's intergovernmental Council for Early Childhood Development.

# Chapter 14

## Developing Teacher-Researchers

### Capacity to Support the Use of New Data Systems



Karyn Aspden, Lynda Hunt, Tara McLaughlin, and Sue Cherrington

**Abstract** The effective use of observation, assessment, and evaluation approaches in early childhood settings depends, in part, on the capacities of teachers to interpret information, draw inferences and collaboratively plan for future experiences. Access to meaningful data from observation, assessment, and evaluation is only as good as practitioners' abilities to use and integrate this information to make informed decisions. Pedagogical leadership, shared team engagement and professional learning and development are central to supporting teachers' acceptance and integration of data-based approaches. For these reasons, a core aspect of the *Data, Knowledge, Action* project involved the support of a teacher-researcher for the collection and sharing of data. In our Teacher-Led Innovation Fund (TLIF) project, a member of each teaching team was nominated to become the teacher-researcher. These teacher-researchers were responsible for the data collection in a partner setting and led their own setting in the use of observation, assessment, and evaluation data. Drawing from interviews with TLIF teacher-researchers, this chapter explores this unique role and the insights shared by these teachers. From initial hesitancy about what constituted data to high levels of confidence and localised innovation with using data tools,

---

K. Aspden (✉) · T. McLaughlin  
Institute of Education, Massey University, Palmerston North, New Zealand  
e-mail: [k.m.aspden@massey.ac.nz](mailto:k.m.aspden@massey.ac.nz)

T. McLaughlin  
e-mail: [T.W.McLaughlin@massey.ac.nz](mailto:T.W.McLaughlin@massey.ac.nz)

L. Hunt  
Formerly West End Kindergarten, Ruahine Kindergarten Association, Palmerston North, New Zealand

S. Cherrington  
School of Education, Victoria University of Wellington, Wellington, New Zealand  
e-mail: [sue.cherrington@vuw.ac.nz](mailto:sue.cherrington@vuw.ac.nz)

K. Aspden  
Institute of Education, Arts and Community, Federation University Australia, Ballarat, VIC, Australia



findings illustrate this transformative role. The preparation and ongoing training that teacher-researchers engaged in to form and enact their role, together with collaboration and support between the teacher-researchers were identified as critical success factors. The chapter highlights key shifts in teacher and team capacity through the teacher-researcher role that has led to meaningful and sustainable use of data to inform teaching and learning.

## 14.1 Introduction

Nā tō rourou, nā taku rourou ka ora ai te iwi.

With your food basket and my food basket the people will thrive.

In 2018, as part of the wider *Data, Knowledge, Action* (DKA) programme of research, cross University academic partners joined with leaders and teachers in a regional Kindergarten Association to undertake a Teacher-Led Innovation Fund (TLIF) project. The project involved four kindergartens from the Ruahine Kindergarten Association with the support of four external partners and the Association leadership team. The project focused on building capacity for data-informed teaching and effective use of innovative and authentic data systems to examine young children's curriculum experiences and strengthen teaching practices and child learning outcomes. The research was guided by the premise that effective data can lead to knowledge which can lead to action for improved curriculum implementation and transformation of practice (cf. Earl & Timperley, 2008; Gummer & Mandinach, 2015). In this chapter we explore the ways in which teacher-researchers engaged with and led the use of innovative data-assessment tools, and the significance of ongoing training and collegial supports to prepare and equip them in these new spaces.

Whilst full details of the DKA programme of research, including the TLIF project, are described in Chap. 13, this chapter reports specifically on the role of the teacher-researchers within the TLIF project, and how they demonstrated increasing pedagogical leadership in facilitating research engagement for each teaching team. Each of the four participating kindergartens identified a focus area of inquiry for which the newly developed data tools and protocols from our pilot study could be adapted and applied. Participating teams also nominated a member of their teaching team to take on the role of teacher-researcher, who would then be responsible for the data collection in a partner kindergarten, whilst also participating in the team-led inquiry in their home setting. The second author of this chapter was also the overall association project lead and lead teacher-researcher; she had previously been involved in the pilot study and was able to provide mentoring and share her experience with the data tools. The three 'new to the role' teacher-researchers engaged in ongoing training with the project lead and two external partners (third and fourth author) acting as critical friends throughout the project. The project was completed over an 18-month

period which included time for data system adaptation and training and two cycles of inquiry for each participating team.

The chapter focuses on the teacher-researchers as they navigated their journey through the project. Their experiences offer insight into both the growth and learning that occurred, the critical importance of initial and ongoing training with research partners, as well as the challenges and emotions experienced along the way. To set the context for this work, we first explore the multiple ways in which teachers can be active participants and leaders in research to support enhanced teaching practice in their own settings. This includes a brief review of the ways the teacher as researcher or teacher-researcher role has been described in literature. This is followed by a description of our project, including the TLIF programme, the project design, how we conceptualised the teacher-researcher role, and the training and support for teacher-researchers. Key themes from teacher-researcher interviews are then presented and discussed. Recommendations for future research and practice are offered in the conclusion.

## 14.2 Teacher Engagement in Research

The issues and questions that drive educational research and practice are typically complex, complicated and multi-dimensional. Policy documents and academic treatises are often inaccessible to the teachers and educational leaders who are responsible for assessment and curriculum implementation on a day-to-day basis. Policymakers and researchers may operate in spaces that are disconnected from the reality of educational contexts. Partnership between researchers and practitioners is increasingly recognised as a powerful means of bridging traditional divides (Gore & Gitlen, 2004) that served to prohibit effective and sustained implementation of research in applied settings.

Terms such as teacher-researcher, teacher research or teachers as researchers are often used when referring to teachers' engagement in research. The nature and purpose of this engagement has been described in different but complimentary ways. For example, in 1986, Bissex posed the question,—“what is a teacher-researcher?”, suggesting the term was often used as jargon in educational settings. Bissex's definition of teacher-researchers as “an observer, a questioner, a learner, and a more complete teacher” (1986, p. 483) suggests that notions of observing with purpose, questioning assumptions, being intentional in their actions, and checking in with learners to understand the outcomes are inherently embedded.

Bauman and Duffy (2001) analysed 34 studies identified as teacher research studies and characterised the ‘typical’ teacher-researcher as a reflective teacher who identifies a persistent teaching problem or questions and decides to initiate an inquiry, often in collaboration with a colleague, using practical qualitative methods and the occasional quantitative tool. The teacher learns along with learners whilst engaging in the investigation and decides to share the research story publicly by writing a narrative story for dissemination. Teacher research and the teacher-researcher in this

sense is viewed as a reflective practitioner who engages in inquiry to enhance practice in their own setting and share their story. This is similar to Robinson's (2003) description of teachers as researchers, whereby engaging in inquiry-based research as part of good practice supports an enhanced view of teachers' professionalism.

Whilst valuable and worthy in their own right, these descriptions of teacher-researchers are generally limited to the local practice context and do not necessarily aim to engage in broader contributions to educational research and development of educational researchers. This additional role or view of teacher-researchers is also present in the literature. For example, Berger and Baker (2008) noted that the reciprocal nature of teacher and researcher partnerships not only builds teachers' knowledge of systematic inquiry for improving practice but also contributes to researchers deepening their understanding of teaching and learning contexts and the characteristics of innovations likely to be adopted in education settings. Oliver (2005, p. 5) asserts that this view of "teacher research arose from the need to close the gap between the work of academic researchers as producers of knowledge about teaching and learning and teachers as consumers of that knowledge". Such collaborations are intended to be highly reciprocal in nature (Berger & Baker, 2008) and actively work to break down traditional power imbalances where research is done *to*, or *about* practitioners, rather than *with* them (Newman & Mowbray, 2012). Through these multiple roles, teacher-researchers can contribute to the development of new knowledge for improved practice *and* experience professional learning working in partnership with researchers. The role of collaboration in mutually reciprocal relationships for the success of these endeavours is essential.

### ***14.2.1 Partnerships Between Teachers and Researchers***

Innovation or partnerships funds (such as the TLIF that supported this reported project) bring together parties with a vested interest in enhancing educational practice through meaningful collaboration between education professionals and researchers. Collaborative research seeks to open up new spaces, in which research is not seen as a privileged activity, but rather made accessible, understood and supported. In doing so, the collective knowledge of practitioners and researchers can be brought to the research questions (Baker et al., 2007) and applied in practice, fostering genuine change and improvement.

Nuttall (2010) affirms a growing body of evidence that partnership models where teachers are positioned and supported as researchers can contribute new knowledge, fresh insights, improved outcomes for children and increased capability for teachers. Such models have a focus on transformation and translation of knowledge into meaningful and sustained practice. In these partnerships, university/academic researchers are often described as external partners or critical friends and assume a key role in supporting the research process whilst also engaging as a learner throughout the research process. The mutually beneficial relationship provides learning and professional growth opportunities for teachers and researchers alike.

Through engaging in teacher research or research partnerships, teacher-researchers foster their professional learning and development and build capacity as researchers and practitioners (MacNaughton & Hughes, 2009), fostering the means by which to address practice questions from an informed stance, rather than intuition or taken for granted approaches (Duncan & Connor, 2013). Duncan and Connor (2013) argue that too often professional learning models rely on top-down hierarchical approaches and emphasise knowledge transmission, rather than providing opportunities for practitioners to investigate and explore localised interventions. When teachers undertake research into their practice with the intention of improving it, they are ultimately preparing to learn. That learning is of use to them only if they can then apply and use it in the context of their classrooms. Amongst the strengths and benefits of teacher research is the contextual nature of the investigation (Oliver, 2005). In such models, practitioners are positioned as experts in their domain and, through inquiry-led approaches, are enabled to use research tools as a means to systematically engage with practice questions, seek to enhance practice, and then disseminate insights to key stakeholders (MacNaughton & Hughes, 2009).

When teachers are able to engage meaningfully with research endeavours, they are able to reconceptualise their practice in the light of new insights gained (Duncan & Connor, 2013). Such skills are often not part of initial teacher preparation, thus external partners or critical friends play an important role in enabling knowledge and skill development and demystifying research endeavours. Though novice as researchers, studies such as Newman and Mowbray's (2012) highlight the value for teacher participants in collaboration, observation, and implementation, as well as enhanced pedagogical and research skills and knowledge. The teacher-researcher role explored in this chapter actively inhabits this space in which practitioners are empowered to use knowledge and skills from both practice and research domains in order to explore practice innovations and seek answers to professional questions with a view to improving outcomes for children.

Authentic collaboration has been shown to provide a rich context for meaningful professional learning and development, offering mutual support, reflective discussion, and shared problem-solving. Such approaches provide many benefits for individual teachers, for teaching teams, wider professional communities, as well as for the children and families with whom they work. Collaboration also enhances the work of university researchers in fostering praxis, bridging traditional theory/practice divides that have long persisted. Herrenkohl et al., (2010, p. 75) suggest that the "roles of teachers and researchers collaborating together often involve moving across the chasm of inside-outside in ways that have the potential to positively impact both communities ... and is an important way that the field can address ongoing concerns about the theory-practice divide".

As Berger and Baker (2008) acknowledge, the teacher-researcher role brings a raft of both benefits and challenges. For teachers, there is access to a new suite of knowledge and skills, both content and research-based. The opportunity to engage actively in the research or inquiry process offers the potential to make real change to their teaching, gain and share new insights and discoveries, and challenge the status quo. As Newman and Mowbray (2012, online) found, working collaboratively

with other teachers and academics “broadened understandings and informed their professional practices and engagement, theoretically, intellectually, and practically”. However, such collaborative approaches are also relationally challenging (Meade, 2010), especially in navigating the nature of roles, the sharing of decision-making and supporting team engagement (Reimer & Bruce, 1994). Flack and Osler (1999) identified a number of factors that are needed for thriving research partnerships including: mentoring; support and encouragement; affirmations of practice; project management; direction from the research partner, spaces to learn the skills and language of research; and encouragement to share work with wider audiences. Time and space for the researcher tasks are also critical (Chow et al., 2015), especially as teachers are typically already carrying substantial and time-intensive workloads that can limit depth and scope of engagement.

From its outset, the DKA programme of research has worked through a partnership model with the dual focus on (1) support for teachers, teams, and those identified as teacher-researchers to build new capacities and confidence with the use of data; and (2) support for researchers to learn about what data tools work, why, and under what conditions. The mutually reciprocal feedback between researchers and teachers resulted in more meaningful contextualised tools and supports and a stronger focus on how tools could be adapted and localised. Within our projects, the role of the teacher-researcher has distinguishing features from other descriptions of teacher-researchers common in the literature. The rest of this chapter focuses on the experiences of the four teacher-researchers within this TLIF project.

### **14.3 The TLIF Project: Multiple Layers of Teachers’ Engagement with Research**

The present project was conducted under the auspices of the Teacher-Led Innovation Fund (TLIF). This fund offered \$18 million over five years (ending in 2019), administered by the New Zealand Ministry of Education for groups of teachers to develop innovative practices in order to improve learning outcomes for children in education. The main purpose of the fund was to foster innovative projects that inquired into new teaching practices, examined ways of applying existing practices in new contexts, and investigated in a systematic way whether such innovations saw improved learning outcomes for children. The Ministry identified two key outcomes sought from TLIF: (1) development of innovative teaching and learning practices and (2) sharing the findings and learning from inquiry projects so others could test promising innovative practices in their own context. Whilst the key to the TLIF model is that teachers themselves drive the inquiry and collaboration with a view to becoming more confident in research inquiry models, the nature of the TLIF also requires a partnership with external inquiry experts who act as critical friends to the project team, supporting design, implementation, data collection and analysis, and reporting.

In 2018, the Ruahine Kindergarten Association, a regional collective of 20 kindergartens serving children aged 2–6 years and their families, partnered with four research staff from three Universities in applying to the TLIF for funding for an innovative data-led practitioner research project that would support professional inquiry individualised to the four participating kindergartens. Amongst the four external partners, two acted as critical friends and were actively involved in supporting the teams' inquiries whilst two acted as advisors and supported the overall evaluation of the project. Funding also provided teacher release for teachers to be able to set the focus for their inquiries, collect and analyse data, take action to strengthen teaching and learning, and then disseminate findings. Dissemination occurred both locally within the wider Association and to teachers throughout New Zealand through reporting, conference presentations, and publications. Information about each team's focus area and their experiences of their inquiry are available in a special issue of the *Early Education journal* (see <https://eej.ac.nz/index.php/EEJ/issue/view/4>).

In the TLIF project, teacher-researchers not only engaged in research within their own setting but were also partnered with another kindergarten where they gathered and analysed data, prepared reports, and shared findings. A collaborative approach was central to the overall project design with the role of the teacher-researcher uniquely positioned within the project. Teacher-researchers received 6–8 days of training and ongoing support from the critical friends and the project lead for refinement and use of data systems to support their partner kindergartens.

Data collection tools included the Child Experience Observation System (CEOS; McLaughlin et al., 2018a, 2019), the Play and Learning Analysis System (PLAS; McLaughlin et al., 2018b) and the Child Profiles (McLaughlin et al., 2018c). Each of these measures is described in Chap. 13 with a summary presented in Table 14.1. This table outlines specific skills and responsibilities for the teacher-researchers in relation to each data system. Teacher-researchers were encouraged to present their partner kindergarten team's data and information without their own interpretations or judgements on possible teaching and learning implications. Thus, any contextual notes provided were descriptive and intended to aid the team in making their own interpretations. Within their own setting, teacher-researchers' knowledge of the systems, particularly the CEOS including specific code definitions, supported accurate interpretation of data during team discussions and data reviews.

In addition to using the data tools, teacher-researchers' training focused on supporting collaboration and partnership for team-based inquiry. This included building trust within teams, establishing the different roles and responsibilities, and setting ground rules for engaging in inquiry learning. A vision statement for what teacher-researchers were hoping to gain from the project and their unique roles within it was developed and returned to throughout the year:

This year we aim to have fun as we work together to inspire and grow confidence in others and ourselves through developing robust, innovative data systems which will give us insights

**Table 14.1** TLIF project data systems

Data system	Brief description	Roles for teacher–researchers
Child experience observation system (CEOS)	<ul style="list-style-type: none"> <li>• 2-h Live observation focused on a pre-selected set of duration and event codes recorded on tablet</li> <li>• Collected and analysed by teacher-researcher (w/ observational software)</li> <li>• Data report prepared by teacher-researcher and shared with the team</li> </ul>	<ul style="list-style-type: none"> <li>• Use the observational software for collection and analysis</li> <li>• Observe for the codes with consistency</li> <li>• Transfer data into an excel report to create graphs</li> <li>• Write contextual observation notes</li> <li>• Manage observation files and reports on Association’s project management system</li> </ul>
Play and learning analysis (PLAS)	<ul style="list-style-type: none"> <li>• Up to 1–hour of video collected from video camera child is wearing or video taken by teacher-researcher</li> <li>• Teacher-researcher reviews and selects video clips based on teaching team priorities</li> <li>• Video clips shared with team</li> </ul>	<ul style="list-style-type: none"> <li>• Use GoPro camera including inviting children to wear the camera and supporting children as needed to remove or adjust</li> <li>• Edit video to create clips for teams using video editing software</li> </ul>
Child Information Profile (CIP)	<ul style="list-style-type: none"> <li>• Paper forms to be completed and discussed by teachers</li> </ul>	<ul style="list-style-type: none"> <li>• No specific responsibilities for teacher-researchers</li> </ul>

and lead to changes in practice whilst building a sustainable culture of inquiry and data-informed teaching practice that makes a difference for children, teachers, whānau<sup>1</sup> and the wider community. (Teacher–researcher/external partner vision statement)

During the 2019 school year, each team engaged in two terms of active data collection on an alternating schedule over all four terms. As teaching teams were provided with their data, they were supported through data review meetings to make sense of the data, engage in ongoing action planning, and try out new approaches for supporting children’s learning. Throughout the project, with the guidance of the teacher-researchers and University partners, teams continued to adapt the systems and integrate them with their existing approaches to documentation, assessment, and planning, to support their sustained use of data-informed teaching. Teacher-researchers and critical friends met regularly to share ideas, experiences, and support. These meetings were used to problem-solve issues, support each other with challenges, share successes and celebrate their growing capabilities and confidence as teacher–researchers.

Alongside each team’s inquiry, the critical friends and external partners explored the training and ongoing professional learning needed to support teams to use new data tools effectively. A key focus of this inquiry was to understand the experience of teacher-researchers. The following section draws on mid- and end-point interview

<sup>1</sup> Whānau is the Māori language word for family. Conceptually, whānau refers to extended kinship links in contrast to the more nuclear family model evident in many Western cultures.

data with teacher-researchers that were collected and analysed by the first author. The first author's role was to support the overall evaluation of the project and she was not actively engaged in the provision of ongoing supports for teacher-researchers and teams.

## 14.4 The Journey of the Teacher-Researchers

The journey of the teacher-researchers was one of significant professional and personal growth. It was not always an easy journey, with a number of challenges along the way, yet each of the teacher-researchers affirmed that they valued the experience highly and would actively choose to participate again. The following sections describe findings that reflect the experiences of teacher-researchers in their own settings, as well as what it was like to act as a teacher-researcher in their partner setting where they were not part of the established teaching team.

### 14.4.1 Initial Feelings

When asked about their journey into the role of teacher-researcher, it was evident that feelings were mixed: excitement about the opportunity being provided, alongside nervousness about the unknown; feelings of uncertainty about whether they had the requisite skills to enable them to succeed in the role, whilst also recognising the opportunity to make a difference. Each of the teacher-researchers had a different journey into the project, with some joining later in the development phase due to staffing changes. Each valued the project as an opportunity for professional learning, as well as an expression of their commitment to enhancing practice and outcomes for children through an inquiry stance. Each of the four also acknowledged their vulnerability in putting themselves forward for such a role, and experienced self-doubt through the initial phases: "*Yeah, that really unsettled me. Am I doing it right? Yeah, so talking with the team that—oh my god, I am not finding any of this information, what am I doing wrong? So, self-doubt I suppose*". (Teacher-researcher FG1).

Most reported coming into the project with little expectation of what might be involved:

I do not know what I was expecting when I first joined but it was not this though. No. Yeah, I think I have learnt a lot more than I ever thought I would, and it has been quite different to what I envisaged it, but in a good way.

...Same deal, I did not really know what to expect but I did not know that it would be this. I was not expecting what I have loved and what I was not expecting was us... the professional dialogue (Teacher-researcher FG1)



### ***14.4.2 Training and Support***

Given the uncertainty and nervousness of the teacher-researchers, initial and ongoing training was essential in building skills, knowledge, understanding, and dispositions for the role. The critical friends played a key role in this journey, providing guidance related to technology, data use, inquiry concepts, and pedagogical leadership within teams. As one teacher-researcher noted:

They took the time to go, “these are some codes” and gave us some practice and then we were going—now we cannot even see through the mud but we worked our way through because they encouraged. They went—“no, you are on the right track, you are” ... so they prepared. I felt prepared to go in and collect data, where I would not have right at the start. (Teacher-researcher FG1)

As teacher-researchers reflected on the process at key marker points along the journey, it became apparent that ‘just in time’ training was essential to their learning journey. There was potential for the new tools, devices and ideas to be overwhelming, especially in the early stages and given the complexity of the project with each kindergarten having their own inquiry focus. To help manage this potential for overload, regular meetings with teacher-researchers throughout the project delivered training at the point of need, and in ways that scaffolded engagement:

It was an unknown journey often, so in order to make that clear we had to talk about it and we had to find time to talk about it and sometimes it was long rambles and sometimes it was we do not know what we are doing and maybe we need to look into this or look into that (Teacher-researcher FG2)

Teacher-researchers noted that whilst at the beginning they felt very reliant on the critical friends, the process by which they took increasing responsibility over time as their confidence and expertise grew was an empowering and rewarding experience.

Support from critical friends was not simply practical or targeted to research outcomes. Emotional support was also important, given the newness of the teacher-researcher role, and the vulnerability of taking on pedagogical leadership within teams whilst feeling unsure and a novice. As one teacher reflected:

I did not feel emotionally prepared, but I actually was. Yeah. And I think it was lovely to be talked to, like how are you feeling? Do you think you need another data collection practice session? To have that framed that way... they cared. Yeah, they cared. Rather than saying—okay, you are just going to do one data collection and then you are away, but to be saying—how are you feeling at the end of that data collection, what are your concerns? (Teacher-researcher FG1)

Though the support of critical friends was an anticipated element in the development of the project, what was more unexpected for the teacher-researchers was the network of support that developed between themselves, acting as sounding boards, moral support and peer coaches when challenges arose. The teacher-researchers reported how important their ongoing teacher-researcher meetings were as a source of support and affirmation that they were not alone in their journey. Teacher-researchers

found strength in the collective experience as they engaged in new learning, experiences and opportunities alongside each other. Of note was the sense of safety and trust that developed; *“It is been great to have each other as a sounding board as well, which you would not get if you were doing it in your own team, I do not think. It is been a very safe relationship in terms of throwing ideas out there”*. (Teacher-researcher FG1).

Operational supports were also needed to enable the ongoing training embedded throughout the project. The support of the Association as employer, and the drawing on project funds for teacher release, created time and space for the teacher-researchers to engage, firstly, with the innovation tools and then with the data collected. Of note, in addition to teacher-researchers having time to engage in the scheduled training was the importance of them having time to think, reflect, evaluate, and forward plan in order to maintain the project momentum and learning.

### 14.4.3 *Shifting Perspectives*

Each of the teacher-researchers reported this project was a profound learning experience that elicited key shifts in their thinking and practice, including: the meaningful use of data; the nature of teaching and learning in early childhood; perceptions of children, and their understanding of themselves as pedagogical leaders and researchers. The following section highlights some of these significant shifts in perspective.

Using a data-led approach to understanding children’s engagement with learning in early childhood was a new experience for each teacher-researcher. All were experienced early childhood teachers, well familiar with observation-based and narrative assessment approaches. However, this project introduced a range of data tools that were new and unfamiliar (as reported in Chap. 13) to the teachers, and novel within the context of early childhood education in New Zealand. As one teacher commented *“I think sometimes we do not sort of stop to look at our practice like that we are not in that position to sort of sit back and observe children in that sort of way”* (Teacher-researcher FG2). Whilst teachers were excited to explore the contribution such data tools could offer, this also required shifts in thinking about the role of data and how it can inform teaching practice. There was initial hesitance about the appropriateness and fit of a data-informed approach—could such tools allow for rich, contextualised understanding of learning? Could the tools be successfully navigated to support team inquiry in meaningful ways? Despite this initial uncertainty, the teacher-researchers came to see data as a powerful tool for fostering change in practice, especially in disrupting potential assumptions and deepening understanding of children’s learning and teacher engagement that might not be captured by informal observations alone.

Teacher-researchers reported a significant shift in both knowledge of data tools and confidence in using them in meaningful ways. Teacher-researchers were more confident with the coding categories, graphing data and editing video-recordings as key aspects of data collection. One teacher described, *“I learnt to trust my instincts and I knew that I was being consistent throughout the whole term”* (Teacher-researcher

FG1). Building that sense of confidence allowed them to share this knowledge and skill with their team members. One teacher-researcher commented how they built:

...our own self trust in ourselves, like sometimes as people we automatically default to—this is completely out of my realm with what I know, and I am not going to be very good at it. And then after you have done it a couple of times you are like—oh, look at me do this. This is not so hard after all. (Teacher-researcher FG1)

Teacher-researchers in the TLIF project reported deep satisfaction with the role that they played in supporting their partner kindergarten team to engage with their data. One teacher-researcher spoke of the excitement that she felt during a data review meeting:

...was just so exciting, oh my gosh, to sit there and listen to the aha moments and the revelations and do the data walk around the table. It was so exciting to be part of that and thinking that I had a little play in this, I collected this data and to watch it all unfold for the team. I just went home on a high, it was like ... yeah, it was thrilling to be part of that. (Teacher-researcher FG1)

The use of data-informed tools also brought about changes in the way teacher-researchers understood the nature of teaching and learning in early childhood education. *“I think one of the things that I have really enjoyed is the way that little bit of extra information can really disrupt teacher’s views of children”* (Teacher-Researcher FG2). For these experienced teachers, with well-established practices, access to these new data was powerful in disrupting taken for granted practices and assumptions about the nature of teaching and learning interactions, leading to shifts in practice individually and for the wider team. As one teacher-researcher captured so clearly:

You have a perception of how it is ticking along and what children learn and how they engage and what happens, and everyone has that perception about it, and you think you know it all—usually, sometimes. And then data reveals something and you are like—I did not even know that was happening and I could not see that happening or that is not something I have even considered. So, that has been really revealing with the whole team. (Teacher-researcher FG1)

The collaborative nature of the data collection and analysis further supported reflection leading to practice change. Having an experienced teacher from outside their team supporting the inquiry process helped teams to see insights and perspectives that might not otherwise have been made visible. As one participant commented:

Having C. come into our kindergarten as the teacher-researcher... she just makes little comments, and we are like—wow! Little insights and things like that, even just the flippant things at the end of the day and we were like, oh we did not know that about ourselves. Yeah, it has been very, very, very positive. (Teacher-researcher FG1)

Alongside shifts in their perceptions of data, teaching and learning, significant shifts occurred in the teacher-researchers’ sense of identity as researchers and pedagogical leaders. The teacher-researcher role had taken them on an unexpected journey

and had challenged their view of themselves as ‘simply teachers’ not capable of meaningful research endeavours—especially in working with data. Yet for each teacher-researcher there was a burgeoning sense of capability and leadership across the timeline of the research. These shifts first became apparent at the mid-way interviews, in which teacher-researchers shared their delight in the successes they had experienced to date, and their growing confidence in meaningful engagement with the data tools and analysis. Teacher-researchers were coming to see themselves as active agents of change and capable problem-solvers, as captured in the following quotes:

I did a personal reflection after every data collection in my teaching portfolio and I found that was quite useful for coming up if there was a problem and think[ing]—is this a problem that I can sort or is it something that I need to follow up with because I am not familiar with this code and what does problem-solving look like?

I guess to have trust and faith in myself that I can be a decision maker and it is okay to sometimes stand up and say—well, actually I have this extra knowledge and my perspective does have a bit of weighting. (Teacher-researcher FG1)

In the final post-research interviews, teacher-researchers were identifying pride in and affirmation of their achievements and contributions, were able to articulate shifts in teaching practice as a result of their endeavours and were looking positively to future dissemination opportunities, which included reporting, publications and team presentations. They were now able to reflect back on their original stance and see their shifts in confidence and capacity:

Isn't it funny? I think that as women maybe, as teachers, we do not like to stick our head above. We do not like to be tall poppies and we do not like to think that we have got this capability and these skills, and we do not own it sometimes, I think. (Teacher-researcher FG1)

Each teacher-researcher came to find different qualities in themselves that had emerged as a result of their contribution and engagement in this project. Though some described practical aspects such as managing camera equipment and creating data charts, it was the opportunity to work with others and support change and growth that was most rewarding:

Learning new skills and new learnings. New learning in different environments and new learning to be able to contribute to another team's environment is really exciting. To be able to support another team with new information and yeah, it just floats your boat really, the new discoveries that research provides about your team and your activities and teaching. (Teacher-researcher FG1)

#### ***14.4.4 Fostering Pedagogical Leadership***

As suggested by the shifts in perspective about themselves as teachers and researchers, one of the significant elements of the teacher-researcher role was the opportunity to step into spaces of pedagogical leadership. Pedagogical leadership does not require a named, positional leadership role but rather focuses on enhancing teaching and learning and promoting quality early childhood practice. The nature of

the research design in both home and partner settings enabled pedagogical leadership in ways contextualised and responsive to the local curriculum of each setting. Using data to support unique cycles of inquiry in the kindergartens saw the data systems and tools used in adaptive ways appropriate for each context. Teacher-researchers demonstrated strengths in taking the conceptual work of data use and data tools and, in partnership with the critical friends, applying this to everyday practice in the context of team inquiry. Such bridging work, in making innovation applied and meaningful to context is a key element of successful implementation and professional growth.

Pedagogical leadership was also evident in the way in which teacher-researchers identified and communicated strengths in practice and facilitated change as a result of data findings. They held a learning attitude throughout, first for themselves, and then in sharing this more widely with the team to foster buy-in and sustained shifts in practice:

Starting off not thinking you know what you are doing or even having the ability to do it and then learning it and discovering that yes, you can do it and you can answer questions for other people who cannot do it. (Teacher-researcher FG2)

Such pedagogical leadership required significant relational work, bridging roles and spaces in ways that fostered ongoing team engagement: this work is described more fully in the following section.

Whilst this discussion has been framed around the emergence and enactment of pedagogical leadership, the teacher-researchers themselves did not adopt this language. There was a humility to their position and a tempering of the impact of their role as individuals, whilst simultaneously recognising these leadership attributes in their fellow teacher-researchers.

#### ***14.4.5 Navigating Roles and Relationships***

The teacher-researcher role was complex and dichotomous by nature. Alongside their engagement with the data tools, teacher-researchers navigated the blurring of their teacher and researcher roles, both as an insider in their own setting and as an outsider in their paired kindergarten. As experienced teachers, teacher-researchers reported at times finding it difficult to view experiences through a research lens. They described how, when observing and interpreting particular interactions, their first reaction was to think about how they might respond or intervene as a teacher but would then need to hold back, acknowledging their status as observers. One teacher-researcher likened the experience to needing to wear different hats:

Which is taking your teacher hat off and putting the researcher hat on because we as teachers, you naturally interpret interactions, and you naturally see things happening and you know the theory behind it, and you know you can back yourself in what you are saying and what's happening but you are not allowed to do that. You have to take that hat off and put your teacher-researcher [hat] on and say this is what the data says, not me. (Teacher-researcher FG1)

Likewise, there were moments during data collection where teacher-researchers were not sure about whether to put aside their researcher role and respond as a teacher. For example:

...there were a couple of small incidents with a child not being kind to another child and I was in the vicinity and we caught eye contact. And the child was ... I could see the child was sussing me out and am I going to step in? I am an adult, so why am I not stepping in? And I had to look away and move away and I found that quite challenging because I understand my role as teacher-researcher is not to step in and several times a teacher would step in and it was a real reflective moment for me that as teachers we do not always know the pre-cursor and what we step in on, we make assumptions of what has gone on prior. (Teacher-researcher FG1)

Yet, whilst a challenging space at times, the outsider role also brought insight and clarity that added to teams' experience in ways that would not have been possible without the teacher-researchers' involvement. Having a person outside the regulated ratio requirements be able to observe was seen as a privilege by teachers:

...on the flip side, have someone come into your setting who is removed and who does not know the context. That perspective has been quite enlightening and quite valuable and sometimes affirming of what we already know, and also adding a perspective that we had overlooked as a team. (Teacher-researcher FG2)

Building relationships with the full teaching team in the paired kindergarten was seen as key by the teacher-researchers. They recognised that team members were unsure whether they would be judged by this outside teacher coming into their space and that it was essential to connect with each team member and build the collegial rapport needed:

I made sure I said hello to everybody because I wanted to build that relationship with the team. So, I would make sure I would touch base and say hello to everyone before I jumped into the research and data collecting. (Teacher-researcher FG1)

Ongoing and open communication about their role and purpose for each visit was essential to help teams feel reassured about having a researcher observing their teaching interactions within their setting. Teacher-researchers acknowledged that whilst there was a collegial relationship and some shared connections, they also had to maintain some distance as the outside observer:

And even though you are part of another team, you are not a team member so you know, you are still that observer. So, you—I'm going to go and hang out with the team mates and then it is like, oh hang on a minute. I do not have an equal say in everything that happens in this kindergarten. (Teacher-researcher FG1)

In building relationships with the paired team, teacher-researchers found that they needed to be flexible and responsive, reading the cues of the team as part of their engagement. This required a level of sensitivity and appreciation of how the teams felt about the presence and contribution of an external observer on any given day:

Communication is a biggie, within your own team and developing a sense of belonging with another team because you are a foreigner coming in really and you have to get to know their culture or suss out their culture. It is like a reliever sort of thing. Suss out the team, how do

I fit in, how do I make them feel trust in me or safe or ... I noticed the first couple of times I took data the teachers avoided me. (Teacher-researcher FG1)

Teacher-researchers' roles thus went beyond data collection and analysis, providing reassurance, clarification, support, and encouragement with regard to teachers' practices and professional growth. The need for such supports waned over time, and an increasing degree of comfort and ease was reported, allowing for enhanced collaboration between teams and their teacher-researcher.

Teacher-researchers reported a range of experiences and challenges in relation to role clarity and shared expectations within their own home settings. Though the teacher-researchers had a key role in data collection and analysis in paired settings, the research design positioned them as equal team members in their home settings. Whilst this felt appropriate in terms of the ways in which the teams worked, there were at times tensions when other team members looked to them to carry the inquiry or to have the answers. One teacher-researcher expressed the vulnerability she felt in the 'in-between' position:

...with that role I found partway through I had to just put my hand up and say, "look guys, I really do not know what I'm doing all the time, please do not assume I do, I really do not", I had to really be vulnerable, which I had not expected happening, I had to make a call so, but we got there, we navigated through it and came out the other side. (Teacher-researcher Role Reflection)

This tension became apparent during regular meetings and check-ins with the external experts, who provided guidance and reassurance to teacher-researchers about navigating their role as pedagogical leaders. The developing relationships between the four teacher-researchers enabled them to increasingly share their challenges and vulnerabilities:

The nice thing is that we have got each other. There will be a common thread between us now, I think, because we have shared our highs and lows and our journey... I did not know that they have also been vulnerable, they have also had challenges and that's really reassuring that when you are open and vulnerable with a small group of people you have a connection and an understanding and that has been lovely. And that has been unexpected. (Teacher-researcher FG1)

#### ***14.4.6 Challenges Along the Journey***

Working with data and engaging with tools that are not familiar can feel both overwhelming and exciting for teachers. For most teachers, research and inquiries are undertaken on top of already busy workloads and existing commitments to children, families, and communities. Time, space, and support for such activities are needed for teachers to engage in ways that lead to sustained, long term application and integration into practice. Teacher-researchers commented that it was challenging to prioritise time for the research, not only for themselves, but also for the teams that they were working with, "*Because to me some of the issues were around prioritising research, and perhaps head teachers did not necessarily always have the same view*

*on that as a teacher-researcher might have”* (Teacher-researcher Role Reflection). Throughout the project, time was needed for training, preparation, data collection and analysis, and collaborative reflection, as well as managing the documentation that sat within these elements: *“discussing it and sharing it and evolving with it as a team and you have got to have the time to do that”* (Teacher-researcher FG1). The time required was sometimes underestimated, especially early in the journey when participants needed longer to understand and build confidence with the tools, *“because it was so new to us—research—we did not really know how that functioned, how it felt, what it looked like until we had gone through it and now, we are reflecting back”* (Teacher-researcher FG1).

An unexpected challenge across the project occurred when there were staff changes within the teams that impacted on their collective work and required the induction of new team members into the project. Alongside ensuring that all consents and ethical considerations were attended to, teacher-researchers felt responsible for fostering a sense of continuity and gaining buy-in from new staff. Considering capacity for ongoing training and inducting new team members are important considerations to factor into research plans from the outset.

#### ***14.4.7 Sustained Changes in Practice***

Our interviews with the teacher-researchers identified much to celebrate in this project. Despite their initial uncertainties, the project had been empowering and transformational, and had led to genuine and authentic change in settings:

I guess it is learning all those new skill sets and actually pushing yourself out of your comfort zone. I was not going to do research and suddenly, yeah, a year down the track we have done it, we have implemented things, we have seen changes and we have learnt new skills. (Teacher-researcher FG2)

Noted outcomes included: increased teacher knowledge of children and more individualised, responsive and intentional teaching; greater confidence in using data and technologies to inform teaching; greater clarity around the potential of data-informed assessment approaches; the ability to lead assessment and inquiry processes; and positive experiences for children and teachers:

I feel like it has been quite revolutionary and we are really proud. Gosh, we have got someone taking data out in nature, we are doing nature explorations and no one has ever done this in our Association before—gathered data on children exploring in nature and we—our team—we feel quite proud of that. And I reckon we need to share what we have learnt because it could benefit others, others who are wanting to go on this journey. Oh, I just want to share it, it is exciting. (Teacher-researcher FG1)



## 14.5 Conclusion

This collaborative project led to significant professional growth and was seen as a transformative experience by the teacher-researchers. Shifts in both perspective and practice were critical for fostering their capacity for sustained, applied and meaningful change (Baker et al., 2007). Teacher-researchers became increasingly skilled in managing the technology, engaging with data and supporting team members, working increasingly independently and confidently by the second data collection cycle. Furthermore, teacher-researchers became passionate about the power of data to provide teams with new insights into children's experiences and prompt change in their teaching practice.

However, as proposed by Bauman and Duffy (2001) the shifts required deep, reflective, and supported engagement to help teacher-researchers feel that they were equipped with the skills, knowledge, and capacity to foster change and implement innovative practices. These findings mirror those in the professional learning literature which highlight the importance of external supports (e.g., Mitchell & Cubey, 2003; Stoll et al., 2006) to assist teachers with data collection and analysis of pedagogy in their own settings. Innovations such as those explored in this project may be unsustainable if they are not paired with sufficient training and support to enable successful initial buy-in and subsequent authentic integration into ongoing practice (MacNaughton & Hughes, 2009). Whilst the teacher-researcher innovation, together with the data tools they learnt to use, has enormous potential to strengthen early childhood teachers' engagement in data-informed teaching, we caution that without the provision of step-by-step and contextualised training there is a risk that the transformative potential can be lost. Such training must also be paired with the time and space for teacher-researchers to take on the elements of their role within the boundaries of their existing workload, often the most significant challenge (Chow et al., 2015).

The role of the teacher-researcher was critical to the success of this project, and it was genuinely exciting for all involved to see their pedagogical leadership (Robinson et al., 2009) and increasing confidence in both their contributions and professional strengths. Teacher-researchers demonstrated extraordinary commitment to their role and resiliently navigated their way through the challenges and vulnerabilities that are often evident in such approaches (Berger & Baker, 2008). Their role was particularly complex, given the paired collaborative design of the project in which teacher-researchers not only worked within their own teaching team, but also engaged in data collection, analysis and feedback for their paired setting. When working with their partner kindergarten, teacher-researchers were insiders as employees within the Association and as members of the profession, but outsiders to the teams in their partner settings. However, given their advanced training in the data systems, the teacher-researchers also took leadership roles through the inquiries in their home kindergarten, facilitating data review meetings and supporting their own team to analyse and make sense of their data. Whilst the inside-outside role (Herrenkohl et al., 2010) with the partner kindergartens was deliberately built into the project

design, the extent to which teacher-researchers came to undertake pedagogical leadership within their own kindergartens was less expected. This is a somewhat unique model in light of most reported teacher-researcher roles and pushed boundaries of insider/outsider research. Yet the bridging of these spaces proves a rich opportunity for knowledge sharing and increasing the mobility and application of the knowledge gained.

The support of the critical friends played a key role in providing the technical, pedagogical, and emotional scaffolding that enabled teacher-researchers to take on increasing responsibility over the course of the project and subsequent dissemination. As intended, the model adopted allowed for theory and practice to intersect in ways that supported contextualised quality improvement (Robinson, 2003) and fostered a community of learning that countered traditional hierarchical research patterns (Newman & Mowbray, 2012). Similar to the themes in the teacher-researcher partnership literature, collaboration, shared decision-making, and mutual learning were key features of the relationships between teacher-researchers and the critical friends (Duncan and Connor, 2013, Flack & Osler, 1999; Meade, 2010). Genuine power-sharing was pivotal to the professional growth journey, especially in adopting a scaffolded approach which began with more intensive supports that were then reframed as teacher-researchers grew in confidence and capability. It is also important to note that although the data reported in this chapter highlights the teacher-researcher perspective, there was a great reciprocity to the collaboration (Berger & Baker, 2008), with the critical friends also positioned as learners, gaining insights and feedback in relation to the data tools, as well as the nature of effective professional supports for future work. The collective shared knowledge and experience enriched the experience for all involved.

The role of the teacher-researcher described in this project steps into a new space between teachers as researchers (Bauman and Duffy, 2001, Bissex, 1986) and more traditional teacher and researcher partnerships such as those described by Berger and Baker (2008) and thus contributes something new to the teacher and researcher collaboration partnership literature. In most teacher-researcher partnership projects (Oliver, 2005), teachers participate as novices in the research process or receive training and supports to work in their own setting, whilst in teacher as researcher projects the practitioner engages in a more solitary investigation into their own setting and practices. In contrast, the teacher-researchers in this project worked across settings within the organisation. Given the specialised training and support within the project, they were able to bring this new advanced knowledge and skill set to the aid of another team, more akin to the role of a senior positional leader, but without management or accountability responsibilities. In addition to their knowledge of data systems and their skills in collecting, analysing and presenting data to their partner kindergartens, teacher-researchers within this study took on considerable coaching roles that supported their colleagues to engage with data in order to strengthen practice and children's learning and curriculum experiences. For organisations thinking about utilising a teacher-researcher model, the insights from this project may be useful to consider in relation to how they might, in particular, create opportunities for teacher-researchers to bridge spaces between research and practice, foster layered networks

of support, ensure time and space for reflection and evaluation, anticipate uncertainty and vulnerability and provide timely and targeted supports. As Nuttall (2010) highlights, such partnership models provide a platform for new knowledge and increased capability for teachers, and the possibility of transformative change. Our findings suggest significant potential to foster pedagogical leadership through opportunities to engage in coaching, collaborative inquiry, and communities of practice.

He pai te tirohanga ki ngā mahara mō ngā rā pahemo engari ka puta te māramatanga I runga i te titiro whakamua.

It is fine to have recollections of the past, but wisdom comes from being able to prepare opportunities for the future.

**Acknowledgements** The authors wish to acknowledge the funding received for the project from the Teacher-Led Innovation Fund. Findings and teacher quotes have been used with permission by the project team. Further details of the project may be found in the final project report: Hunt, L., McLaughlin, T., Cherrington, S., Aspden, K. & McLachlan, C. (2020). *Data, knowledge, action project: A teacher-led inquiry into data-informed teaching in early childhood education, Final Report*. Teacher-Led Innovation Fund (TLIF) project led by the Ruahine Kindergarten Association, 2018–20. Report accepted by the MOE in February 2020.

## References

- Baker, E. L., Baker, R., Berger, J. G., Darmon, A., Gogolin, I., Hogan, D., Niemi, H., & Wolter, S. (2007). International commentaries: Improving educational research: TLRP's projects and themes. *British Educational Research Journal*, 33(5), 781–804.
- Baumann, J. F., & Duffy, A. M. (2001). Teacher-researcher methodology: Themes, variations, and possibilities. *The Reading Teacher*, 54(6), 608–615.
- Berger, J. & Baker, R. (Jan 2008). *Developing new knowledge and practice through teacher-researcher partnerships*. <http://www.tlri.org.nz/sites/default/files/pages/developing-new-knowledge.pdf>.
- Bissex, G. (1986). On becoming teacher experts: What's a teacher-researcher? *Language Arts*, 63(5), 482–484.
- Chow, K. C. K., Chu, S. K. W., Tavares, N., & Lee, C. W. Y. (2015). Teachers as researchers: A discovery of their emerging role and impact through a school-university collaborative research. *Brock Education: A Journal of Educational Research and Practice*, 24(2), 20–39.
- Duncan, J., & Conner, L. (2013). *Research partnerships in early childhood education: Teachers and researchers in collaboration* (First edition). Palgrave Macmillan.
- Earl, L., & Timperley, H. (2008). Understanding how evidence and learning conversations work. In L. Earl & H. Timperley (Eds.), *Professional learning conversations: Challenges in using evidence for improvement* (pp. 1–12). Springer.
- Flack, J., & Osler, J. (1999). We're teachers, we're researchers, we're proud of it! *Australian Educational Researcher*, 26(3), 89–104.
- Gore, J. M., & Gitlin, A. D. (2004). [RE]Visioning the academic–teacher divide: Power and knowledge in the educational community. *Teachers and Teaching: Theory and Practice*, 10(1), 35–58. <https://doi.org/10.1080/13540600320000170918>
- Gummer, E. S., & Mandinach, E. B. (2015). Building a conceptual framework for data literacy. *Teachers College Record*, 117(4), 1–12.

- Herrenkohl, L. R., DeWater, L. S., & Kawasaki, K. (2010). Inside AND Outside: Teacher-researcher collaboration. *The New Educator*, 6(1), 74–91.
- MacNaughton, G., & Hughes, P. (2009). *Doing action research in early childhood studies*. Open University Press.
- McLaughlin, T., Hunt, L., Cherrington, S., Dodge, T., Hildred, S., Stanley, C., & the Data Knowledge Action Project. (2019). *Data knowledge action social engagement and interaction codes*. Unpublished instrument, Institute of Education, Massey University.
- McLaughlin, T., Cherrington, S., McLachlan, C., Aspden, K., & Hunt, L. (2018a). *Play and learning analysis system*. Unpublished instrument.
- McLaughlin, T., Hunt, L., Cherrington, S., Aspden, K., & McLachlan, C. (2018b). *Child experience observation system*. Unpublished instrument.
- McLaughlin, T., Hunt, L., Cherrington, S., Aspden, K., & McLachlan, C. (2018c). *Child profile*. Unpublished resource.
- Meade, A. (2010). The contribution of ECE Centres of Innovation to building knowledge about teaching and learning: 2003 - 2010. Paper presented at the TLRI Early Years Symposium, NZCER, Wellington, 12th November 2010. <http://www.tlri.org.nz/sites/default/files/pages/AMeade-ECE-Paper2010.pdf>.
- Mitchell, L., & Cubey, P. (2003). *Characteristics of professional development linked to enhanced pedagogy and children's learning in early childhood settings: Best evidence synthesis*. New Zealand Ministry of Education.
- Newman, L., & Mowbray, S. (2012). 'We were expected to be equal': Teachers and academics sharing professional learning through practitioner inquiry. *Teachers and Teaching: Theory and Practice*, 18(4), 455–468.
- Nuttall, J. (Nov 2010). *The contribution of the Teaching and Learning Research Initiative to building knowledge about teaching and learning: A review of early years projects, 2004–2010*. Paper presented to TLRI Early Years Symposium.
- Oliver, A. (2005). *The TLRI: Teachers' perspectives on partnership and research*. NZCER.
- Reimer, K. M., & Bruce, B. (1994). Building teacher-researcher collaboration: Dilemmas and strategies. *Educational Action Research*, 2(2), 211–221. <https://doi.org/10.1080/0965079940020206>
- Robinson, V. M. J., Hohepa, M., & Lloyd, C. (2009). *School leadership and student outcomes: Identifying what works and why--Iterative Best Evidence Program*. New Zealand Ministry of Education.
- Robinson, V. (2003). Teachers as researchers: A professional necessity. *SET*, 1, 27–29.
- 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.

**Karyn Aspden** is a Senior Lecturer in Early Years Education in the Institute of Education at Massey University. She began her career as a teacher and leader in a range of early childhood services, before moving into initial teacher education. She is Programme Coordinator of the Graduate Diploma of Teaching (ECE). Her teaching areas include leadership in early childhood education, studies of infants and toddlers, professional practice and early intervention. She is passionate about supporting both student teachers and experienced teachers to enhance their professional skills and knowledge, to be effective, informed and intentional teachers of young children. Her research interests include practicum, effective teaching practice, early intervention and infant and toddler pedagogy. The importance of meaningful and responsive relationships is the thread that weaves through each of these areas.

**Lynda Hunt** is recently retired from a lengthy career as a kindergarten teacher in Aotearoa New Zealand. She has worked for many years for the Ruahine Kindergarten Association, including being the head teacher of West End Kindergarten for over 10 years. She was also the lead teacher researcher for the Data Knowledge Action projects reported in this volume, in which role she

mentored teachers to become researchers in their own setting and she gathered and analysed a significant amount of data. She has also been involved in other research projects with colleagues at Massey University.

**Tara McLaughlin** is a Senior Lecturer in Early Years Education and the founder and director of the Early Years Research Laboratory in the Institute of Education at Massey University. Prior to this appointment, she was a Research Scientist at the University of Florida in the Anita Zucker Center for Excellence in Early Childhood Studies. As a teacher, teacher educator and researcher in Early Years, she is committed to supporting learning environments that promote diverse and equitable opportunities for all children and families. She maintains an active research programme in range of topics related to early learning supports and services for young children, including children with disabilities, their families, and the teachers and specialists who serve them. Her research focuses on inclusive high-quality early intervention and early childhood education. Key focus areas include exploring (a) evidence-based, intentional and social–emotional teaching practices; (b) assessment and data-informed teaching; and (c) innovative professional learning and development. Her research uses an eclectic mix of research methods including statistical techniques and a focus on measurement quality in educational research. She is currently the lead investigator in the data, knowledge, action projects, funded by the Teacher Led Innovation Fund (TLIF) and Teaching, Learning, Research Initiative (TLRI).

**Sue Cherrington** is an Associate Professor in the School of Education and is Director of the Institute for Early Childhood Studies at Victoria University of Wellington. She has an extensive background in early childhood education, as both a kindergarten teacher and in early childhood teacher education. Her overarching research focus is on professional and pedagogical practices in ECE. Within this broad focus, her research concentrates on EC teacher thinking and reflection, including the use of video to support collective thinking and reflection; teacher professional learning and development, particularly through professional learning communities (PLC) and the evaluation of professional development programmes for EC practitioners; teachers' ethical and professional experiences and practices; teachers' professional and pedagogical responses to working with diverse children and families; and investigation of the use of innovative data collection tools for use by teachers in ECE settings. She has developed methodological expertise in the use of video stimulated recall methods within educational settings.

# Chapter 15

## Looking Towards the Future Use of Assessment and Data Systems in Early Years Settings



Claire McLachlan, Tara McLaughlin, Sue Cherrington, and Karyn Aspden

**Abstract** This chapter draws together the themes from the chapters in this volume in relation to the usefulness of assessment and data systems for supporting pedagogy, curriculum planning, assessment practices and evaluation. The chapters draw from both early childhood and junior primary settings, offering insights into how to provide useful assessment of children from birth to eight years. The collection focuses on a middle ground for assessment practices in early years in which a range of approaches and purposes are respected, whilst advocating for approaches most appropriate for teachers, children, and families and communities, in the context of educational settings. In some way, all of the chapters address issues related to effective assessment, inclusive of a range of approaches that support children's agency as learners and fits the intended purposes for assessment. Chapters explore assessment broadly and within different domain areas. This chapter will also explore the conditions that support effective assessment and some of the implications of these studies for supporting teachers through the provision of professional learning and development and for future policy development. There are some valuable insights into how assessment practice can and arguably should evolve going forward if we are to better support our youngest learners.

---

C. McLachlan (✉) · K. Aspden  
Institute of Education, Arts and Community, Federation University Australia, Ballarat, VIC,  
Australia  
e-mail: [c.mclachlan@federation.edu.au](mailto:c.mclachlan@federation.edu.au)

K. Aspden  
e-mail: [k.m.aspden@massey.ac.nz](mailto:k.m.aspden@massey.ac.nz)

T. McLaughlin  
Institute of Education, Massey University, Palmerston North, New Zealand  
e-mail: [T.W.McLaughlin@massey.ac.nz](mailto:T.W.McLaughlin@massey.ac.nz)

S. Cherrington  
School of Education, Victoria University of Wellington, Wellington, New Zealand  
e-mail: [sue.cherrington@vuw.ac.nz](mailto:sue.cherrington@vuw.ac.nz)

## 15.1 Introduction

There are some big ideas about assessment in the early years in this volume, which we draw together in this chapter. As the chapters in this volume show, assessment in the early years is an important topic and one that bears considerable thought if it is to be done well, to provide the best conditions for children's learning, and to enable teachers to be more effective in their practice. Current research on teaching, learning, and assessment with infants, toddlers and young children shows that learning is more than the individual construction of knowledge. Socio-cultural approaches to assessment using Vygotsky's (1986, 1998) theory and neo-Vygotskian theory explored by many authors in this volume encourages the active involvement of children, families, community and other stakeholders in the assessment process (Barron & Hammond, 2008; Fler & Robbins, 2006; Sylva et al., 2010). Many of the chapters in this volume have examined both what children can do now individually and what they can do with the help of others, supporting Vygotsky's (1986, 1998) principles about assessment of the capabilities that are in the process of maturing, as well as those that have matured. These sociocultural approaches to assessment recognise that learning for young children occurs in the context of social and cultural participation, and developing understandings are enacted in a social context (Vygotsky, 1998). Therefore, it follows that assessment practices must take into consideration the learning process and show transformation of understanding rather than an end point (Fler & Robbins, 2006). Viewed in this way, assessment is a collaborative process that seeks to understand children's learning at home and in the early years setting through collaborative partnerships (Brooker, 2010). In such a model, children and their families and communities are collaborators in assessment, and teachers therefore need to find meaningful ways in which to ensure that children and their parents/caregivers have regular and appropriate ways in which to contribute to the assessment of their children (Bagnato et al., 2014; McLachlan et al., 2013; Snow & van Hemel, 2008). Many of the chapters in this volume have powerfully illustrated how this collaborative approach to assessment can be achieved.

We started this volume by discussing two things: the polarising debates around big data and the assessment of children on school entry to demonstrate the effectiveness of investment in early childhood education (Bradbury, 2015, Gordon Commission, 2012; Phair, 2015, 2021) and the ideological positioning of some early childhood teachers and researchers against the use of data to evaluate young children's learning (Carr et al., 2016; Moss et al., 2016; Pence, 2016). We also discussed the pendulum swing between psychometric approaches to assessment of learning and educational approaches to assessment (Crooks, 1988; Snow & van Hemel, 2008), with qualitative, narrative approaches to assessment being positioned in some countries as the only way to assess young children (Blaklock, 2012; Carr et al., 2016). This volume shows that there is middle ground to be explored, in which teachers, children and families can make use of a wide range of data systems to examine children's learning and progression in the early years. This middle ground position does not negate

governments' needs to establish that young children are getting adequate opportunities to learn in early year's settings, to evaluate the outcomes of their investment and to benchmark progress alongside other countries (Phair, 2015, 2021). Equally, it does not negate teachers' and families' opportunities to use authentic assessments including narrative approaches such as learning stories to plan for and document children's learning and experiences in early childhood settings (Bagnato et al., 2014; Carr et al., 2016; McLachlan et al., 2013). What it does do, however, is open a space for conversation about using a range of approaches and strategies to collect and analyse assessment data that are fit for purpose and yield a range of different data that can be used to support children's learning.

One of the possible titles for this volume was 'beyond observation in early childhood settings', but that was rejected by the editors, as observation remains a crucial aspect of the early childhood teacher's assessment repertoire of strategies for assessment. However, what this volume demonstrates is that some teachers are doing 'observation plus' as they explore an expanded repertoire of ways to collect and analyse assessment data. It is important that we keep an open mind about how to assess young children and avoid the narrow perspectives at either end of the pendulum swing. Teachers need to have an expanded set of options for assessment to meet the diverse learning needs of children, and for this reason, the key focus of this volume is on assessment that is fit for purpose. This notion of being fit for purpose is of particular importance for observing learning and development for young children from infancy to school entry, which encompasses a rapid and crucial period of growth and development (Gluckman, 2011). The range of assessment practices exemplified across the chapters show what is possible when teachers, children and families explore the possible alternatives. The key themes to be addressed in this chapter include a focus on effective assessment practices, how assessment can support a focus on domains of learning and development and the conditions required for effective assessment in ECE settings.

## 15.2 Effective Assessment Practice

One of the strong themes emerging from the chapters in this volume is that good assessment does not happen by accident. Nor does assessment happen in a vacuum, it is influenced by curriculum, evaluation, teacher education and professional supports, teachers' beliefs and the expectations on teachers through regulation and policy. Effective assessment needs to be planned, and it needs to involve effective collaboration of teaching teams, children and families, communities and sometimes external agencies or individuals. As Featherstone (2011) argues, teachers need short-, medium-, and long-term plans for assessment. She describes these plans as follows:

- Short term would include what we do today or this week.
- Medium term would include strategies to try out over this term or semester.



- Long term includes the strategic level of assessment, including what the teaching team will do throughout the year and how they will evaluate it.

Many of the chapters in this volume have addressed these issues in relation to planning for assessment and discussed the strategic issues of how curriculum planning relates to the revised approach to assessment. The chapters illustrate what happens when teaching teams begin to think about assessment in a more systematic way and in ways that requires short-term, medium-term and long-term planning and evaluation. Some of the key ideas for effective assessment identified across chapters include a positive view of assessment and data systems in the ECE context, issues related to assessment being ‘fit for purpose’ and appropriate use of assessment tools, the ways in which assessment can offer children agency and clarity on purpose of assessment in early learning settings.

### 15.3 Assessment and Data Systems

The first and arguably most important theme is that teachers need not be afraid of data. Although many teachers have had limited preparation in the use of a range of data systems in their initial teacher education courses or practicums in the early years, the studies in this volume show that teachers can move beyond solitary use of observation—or worse, singular and narrow approaches to observation—in ways that can help to focus and expand the usefulness of observation. Many of the chapters show how the use of a range of assessment approaches and strategies can provide different lenses for observation, generate useful data and can give teachers confidence to make decisions about which approaches will work best to achieve the information that they seek.

Furthermore, the chapters show that data systems have the potential to help teachers get beyond only using a strengths-based approach to assessment, which has become increasingly prevalent in recent years (Blaiklock, 2012; Cameron Chap. 3). To recognise children’s right to health and education—as promised in the signing of the United Nations Conventions on the Rights of the Child (United Nations, 1989) in many countries—teachers need to know about children’s strengths, as well as their zone of proximal development and social situation in their current developmental period or phase, using Vygotsky’s (1998) framing, and what supports may be needed to help them progress beyond the current zone and to address any learning needs. The chapters highlight that greater use of data systems enables teachers to be more formative in their use of assessment and to tailor curriculum opportunities and pedagogies to support learning more effectively. Finally, many chapters have explored how children can be enabled to be more agentic in the early years by using approaches that support the use of children’s voices as an important data source.

Research suggests that when data are used to inform teaching and learning it is a powerful tool for transforming teaching practice (Earl & Timperley, 2009). New Zealand research has identified the usefulness of data systems and discrepant data

for promoting change in teachers' practice, as well as the importance of external agents in supporting data interpretation (Mitchell and Cubey, 2003; Timperley, 2010; Timperley & Robinson, 2001). Timperley's work in New Zealand schools has long shown that the effective use of data can be a powerful driver of teaching and learning—with the power to transform and improve teaching practice and strengthen learner outcomes (Cooper, 2017; Earl and Timperley, 2009; Timperley, 2010; Timperley & Robinson, 2001). McLaughlin et al. (2020) define data in education as “information relevant for learning and teaching collected through a known process for a known purpose” (p. 4). Data-informed teaching occurs when teachers use a range of sources of information to inform decisions about teaching and learning. These sources are gathered intentionally and include both formal (i.e. more structured) and informal (i.e., less structured) sources of information.

In early learning, different forms and systems of observation are particularly well suited to gather information in authentic settings for teachers and children (cf. Podmore, 2006). However, teachers need the capabilities, mindsets, systems and supports to effectively and appropriately use data to inform assessment and evaluation (Bocala & Boudett, 2015; Datnow & Hubbard, 2016). International research indicates both process and dispositional aspects are associated with the use of a range of data gathering systems, suggesting that teachers require knowledge and skills to work with data, along with key habits of mind (Bocala & Boudett, 2015; Shildkamp & Poortman, 2015).

In Chap. 13, Cherrington et al. argue for data-informed teaching and further propose that access to and support to use data can strengthen teaching and children's curriculum experiences and learning. Their findings focus on the impact of tool use on teachers' thinking and practice, including their:

- Increased confidence in using data tools and working with data,
- Strengthening understanding of children's curriculum experiences and
- Teacher reflection on and enhanced pedagogical practices.

Drawing on data from three interrelated studies from the data, knowledge, action project, Cherrington et al. identified the importance of authentic observations, as well as the need for time for teacher discussion and reflection on their collected data. They also found that whilst the use of a range of data systems confirmed some teachers' informal knowledge, looking across children showed the variability in their experiences of children and their discrepant assumptions. The PLAS and profile tools used in these studies provided considerable discrepant data that were powerful in shifting teachers' thinking about children and practice. Access to a greater range of data strengthened teachers' assessments, including the quality of their learning stories, which became more detailed and more inclusive of progressions in children's learning. Once teachers became familiar with the tools and their various uses, they began integrating different tools into their existing assessment, planning and evaluation practices with findings showing that different tools 'spoke' to different teams, often linked to the degree of discrepant data that they experienced. Cherrington

et al., found that a range of key supports contributed to each team's success in integrating different tools into their ongoing practice, including critical friends, teacher-researchers and the financial support of the research studies which enabled teacher release and opportunities to build leadership. Implications of this study suggest a need for a greater focus on using a wider range of assessment tools in initial teacher education and through in-service professional learning to support teachers to learn how to use data and data systems.

## 15.4 Fit for Purpose and Appropriate Use of Assessment

One of the key takeaway messages from this volume is the notion of having assessment that is fit for purpose for the developmental phase and cultural context of the child in their own learning journey. The chapters in this volume establish that good data are needed at the local level and that there should be goodness of fit between the curriculum demands and the assessment concepts in operation. This is not a one size fits all equation. Teachers need to collect meaningful data about children which will support their learning in the ECE setting, as well as foreshadow learning opportunities that may be needed to support their transition to the next level of education. In many ways, this phenomenon of having local and contextual needs for assessment is universal—as academics, we have heard the same comments made about the learning needs of high school students transitioning to university and about undergraduate preservice teachers in preparation for the transition to the teaching workforce. One caveat about this volume is that the authors have primarily presented research focussed on young children (typically 3–8 years) in early childhood and junior primary settings. Although there are important implications for assessment of infants and toddlers, further research is needed in this area as there is currently little systematic research to illuminate specific issues for assessment of infants and toddlers (Akers et al., 2015; Cooper, 2017).

Although the need for policymakers to access standardised data about young children and achievement to address questions on the return on investment is well understood (Phair, 2015, 2021), the need for assessment which helps teachers with the day-to-day realities of helping a diverse cohort of young children to learn is of equal importance. As teachers and researchers, we may need to advocate for the importance of this local, contextual data in order to achieve the outcomes policymakers are concerned with. This calls for ensuring policy provision and support for assessment that presents a good match between the requirements of the national and/or local curriculum and the sociocultural context of learning for young children. Much recent research has recognised the additional understandings that teachers require to teach children in ECE settings in areas of economic, social and cultural disadvantage, as well as those who have experienced some form of trauma, so it follows that teachers will equally require a well-developed assessment tool kit to identify progress in learning in children in such settings (Espinosa, 2012; Gluckman, 2011). The chapters in this volume advocate for something more than what is common in ECE settings,

and which makes greater use of data and diverse approaches to assessment whilst also rejecting the downward push or ‘schoolification’ of assessment in the early years. Taken together, the chapters argue for a unique and varied approach to the assessment of young children.

Whilst data have the potential to be a powerful driver of quality teaching and learning, it also has the potential to be misused or cause harm. Thus, designing assessment and data systems with integrity and clarity is critically important so that they are used as intended and with an awareness of the ethical responsibility for supporting positive outcomes and guarding against unintended or harmful outcomes (Akers et al., 2015; McLachlan, 2017; Snow & Van Hemel, 2008). Contemporary theoretical perspectives about children’s learning and development emphasise social relationships as a basis for learning and acknowledge that there is no one ‘right’ way for all children to learn (Darling-Hammond & Snyder, 1999; Grisham-Brown, et al., 2006); accordingly, assessment needs to suit the context and the child and to be ‘fit for purpose’ and ‘authentic’. Authentic assessment comprises some key principles: finding out what children know and can do, using familiar materials; taking account of children’s learning contexts and drawing on multiple sources of evidence (Bagnato, 2007; Bagnato, et al., 2014). Research reveals that teachers’ scope of assessment practices may limit what they know about children and their learning (Anthony et al., 2015; Cooper et al., 2014; Karlsdottir & Garoarsdottir, 2010; Nah, 2014). As these studies suggest, when teachers have limited insights and evidence about children because of using a limited range of assessment methods, it limits their understanding of the children they work with and their ability to be effective teachers.

As the chapters in this volume show, assessment tools are not the problem—it is the use and sometime misuse of them that can create problems. As Chap. 2 by McLachlan and McLaughlin argued, assessment approaches are integrally linked to the prevailing policies of the government of the time and their espoused aspirations for children. Furthermore, whilst some assessment tools may be popular and widely used, they can wind up being overused or inappropriately used, potentially narrowing teachers’ insights into children and their learning (Akers et al., 2015; Cooper, 2017; Snow & van Hemel, 2008; Zhang, 2015, 2017).

Monica Cameron’s analysis of the overuse of learning stories in New Zealand ECE settings in Chap. 3 provides a useful illustration of this point. Cameron found that the almost exclusive use of learning stories in these services resulted in a heavy emphasis on informal observations, with few formal observations or other assessment information collected. She also identified that teachers displayed considerable confusion regarding the difference between collecting and documenting information and engaging in assessment. Finding that giving feedback and sharing learning through learning stories was ranked more highly than using assessment to inform planning by teachers; Cameron concluded that formative assessment was not achieved, particularly given the disquiet amongst some respondents as to whether they should be assessing children’s learning at all. She argues that there have been mixed and softened messages about the place and role of learning stories within assessment and planning, which may have contributed to this lack of formative assessment. As

Cameron argues, there is a risk that the informal nature of existing assessment practices results in inadequate assessment across the learning outcomes of *Te Whāriki* (Ministry of Education, 1996, 2017), meaning that potentially children are not having their strengths, needs, interests and preferences assessed or planned for, resulting in less-than-optimal opportunities for learning and development. She concludes that to address the potential for poor use of assessment tools, teachers require robust foundational knowledge and skills so that they can appropriately gather a wide range of data about children to guide their teaching, as well as engage with families in a knowledgeable way about their children and their progress.

## 15.5 Empowering Children Through Assessment

Traditional assessment approaches have typically prioritised adult voices in collecting, sharing, analysing, interpreting and reporting data about children, for a variety of purposes. Such models presume a position that adults know best for children (Ruscoe et al., 2018) and should act in protective and instructive ways. In doing so, assessment relies on adults to engage with assessment data in responsible and respectful ways and to use assessment data appropriately. Yet, as demonstrated across the chapters of this book, there are increasing shifts towards innovative assessment processes that disrupt traditional hierarchical models in which the adults hold power in the assessment space. Instead, we see a commitment to finding meaningful ways for children themselves to be empowered to contribute to, and be informed by, assessment data. *Te Whāriki*, the New Zealand Early Childhood Curriculum Framework, asserts that teachers must be “attentive to learning and able to make this visible through assessment practices that give children agency and enhance their mana” (Ministry of Education, 2017, p. 59) and reminds us that children “have increasing capacity to assess their own progress, dictate their own learning stories, and set goals for themselves” (Ministry of Education, 2017, p. 64). Such statements suggest a significant shift towards a view of children as empowered, agentic persons holding central rights to contribute to decisions that relate to them (Phillips et al., 2020), as well as recognising their capacity to understand and communicate important messages about their experiences in early childhood education (Ruscoe, et al., 2018).

As we reflect on the social and cultural nature of assessment approaches in early childhood, it is essential that we critique the lenses through which assessment is conducted (Dahlberg, 2009), and the voices and interpretations that are prioritised. To take a stance in which children’s voices are given significance in assessment takes time, dedication and resourcing and may sit counter to established approaches, especially for summative assessment purposes. Yet such approaches not only empower children, but they also serve to empower teachers to be more attuned, responsive and engaged in a dynamic, co-construction of learning with children that holds the potential for transformation and pedagogic improvement and an increased quality of ECE experience. Several chapters in this book have given insight into ways in which

teachers in different contexts have made meaningful changes to the ways in which children are involved as active contributors to assessment and given the opportunity to be involved in decision-making that leads from assessment data, leading in turn to enhanced quality early education experiences.

For example, Pauline Harris in Chap. 11 argues that children must be seen as stakeholders in the assessment process. She suggests that children's voices must be captured to inform learning—as well as to transform teaching practices and argues that assessment has been a domain where children's voices have not been captured and considered in teaching practice. Drawing on the notion of authenticity, she argues for strengths-based assessment processes and the use of dialogic encounters with children to help understand their perspectives on their own learning. She presents the importance of what she calls 'child-voiced' assessment—allowing children's agentic voices to reveal their learning and engagement as they go about their business of learning and development. She proposes that teachers need to recognise the importance of moving from recording observations to authentic documentation of child-voiced data, which provides rich insights into and makes visible children's learning and capabilities that may otherwise lie hidden. She also argues that engaging children in this way honours the principles of the Convention of the Rights of the Child (United Nations, 1989) by allowing children to contribute to decisions that impact their lives and well-being. Reflecting on the use of narratives and portfolios, she proposes that these can be used to provide examples of learning which are deeply embedded in meaningful contexts, whilst acknowledging certain conditions need to be met. She also concedes that child-voiced approaches to assessment can be time-consuming but if embedded in participatory, dialogic pedagogies, child-voiced assessment can become established in everyday practice. In this way, she argues that assessment has the potential for transformational pedagogical change. She concludes that it is important to listen deeply to children and to use multimodal forms of expression so that their voices can be heard.

Likewise, Anna Fletcher in Chap. 10 considers children's engagement in formal literacy experiences with built in self-assessment and argues for the critical importance of involving children in self-assessment as a means of fostering metacognition and ownership of learning. She affirms that positioning children as co-owners of the learning process and actively making space for their involvement in assessment help children to be reflective and to identify their learning strengths as well as areas for future learning. Her research trialled an innovative assessment approach that drew together both formative and summative purposes in meaningful ways and found that artefacts of self-assessment can guide learning, but also in turn be utilised in informing summative assessment. However, teachers need guidance to see and utilise these possibilities, especially in the face of established assessment approaches that perpetuate a formative/summative divide.

Discussing the issue of children's voices in assessment, Cameron van der Smee and Ben Williams (Chap. 8) show how engaging with children's voices can provide the sort of discrepant data that Timperley (2010) and others (McLachlan et al., 2013; Mitchell and Cubey, 2003) have advocated can help teachers to shift their perceptions of children and their learning and to change the pedagogies they adopt. As they

argue, using a range of child-centred approaches to assessment in junior primary school settings can open educators' eyes to different views of children that may contradict their perceptions gained through observation. In Chap. 8, these authors show that if teachers had based their understandings of children's interest on their capabilities alone, they would not have had the insights into children's motivation for learning that using child-voiced approaches enabled. In the cases provided, child-voiced approaches such as interview and drawing provided greater insights that would support curriculum and pedagogy in junior primary physical education.

Elizabeth Rouse in Chap. 12 presents findings in a similar vein. She also identified the importance of children's voices through the use of conversational interviews and photo-imagery. Like van der Smee and Williams, Rouse argues that assessment should prioritise children's voices to support teachers to hear and understand learning from the perspective of the child and to enable children's self-reflections on their learner identity. In order for this approach to assessment to be effective, Rouse argues that we need to view children as confident and capable of contributing to assessment. She presents Reggio Emilia-based case examples of teachers and researchers working together to collect and share data. The data revealed clear evidence of child agency in the collection of the photos and what they felt about the learning. Rouse argues that the inclusion of children, their voices and their perspectives into approaches to assessment creates the condition for good assessment practice in the early years.

*Te Whāriki* (Ministry of Education, 2017, p. 18) asserts that "in an empowering environment, children have agency to create and act on their own ideas, develop knowledge and skills in areas that interest them and, increasingly, to make decisions and judgments on matters that relate to them." In each of these chapters, we see assessment practices and the use of assessment data being driven by a defining commitment that children are citizens imbued with mana<sup>1</sup> and identity and thus central to decision-making and experiences in early childhood education (Phillips et al., 2020). The researchers and teachers involved in these studies confronted existing assessment models with innovations that challenged dominant perspectives and actively made space for children's voices to be heard in meaningful ways, which in turn allowed for more responsive decision-making and enriched experiences. How such innovations can find a sustained and manageable space in education remains an important challenge for future assessment approaches.

## 15.6 The Purpose of Assessment in Early Learning Settings

Earlier, we commented on the purpose of assessment, contrasting the different intentions and approaches used when assessments are used to inform policy decisions versus those used by teachers in order to understand and strengthen learning and teaching within their local setting and context. Within the focus of this volume on assessment within local contexts and undertaken by teachers, more nuanced

---

<sup>1</sup> Prestige, power, and status including spiritual power.



purposes for assessment are evident in the chapters presented. Several chapters discussed above have argued that assessments which involve children in the assessment process provide benefits to children in relation to their engagement with and self-assessment of their learning, alongside the transformative impact on teachers' pedagogy when they ensure children's voices and perspectives are heard within the assessment process. The engagement and involvement of parents and families in their child's assessment and learning is also well recognised as important (Bagnato et al., 2014; McLachlan et al., 2013; Snow & van Hemel, 2008) but is not without its challenges. For example, Cameron's (Chap. 3) research has found that whilst family engagement in assessment was lauded by teachers in her study, she identified limited evidence that this occurred beyond informal sharing and access to portfolios or learning stories, displaying a significant disconnect between espoused and actual practice.

In Chap. 6, Morrissey et al. have argued how, in using e-portfolios, to share information with parents, teachers may lose sight of the need to observe children with focus and purpose; instead, too often just gathering informal observations, photos and creating e-portfolios that are 'scrapbooks' for families rather than assessment data that are thoughtfully reflected on and used to inform further teaching. Their chapter focussed on learning outside and exemplified two types of knowledge-based observation tools that can help teachers understand the full range of learning opportunities in the outdoors. The case examples presented in their chapter show how observation techniques can be usefully adapted so that they better focus on different domains of children's learning. In the examples provided, teachers were supported to slow down and take time to carefully notice children's imaginative play in the outdoor environment and to use attentional tools to increase their awareness of children's multisensory and movement experiences in the outdoors. As they advocate, to be more effective at assessment of young children's learning across domains, teachers need to develop greater observational expertise and consider the usefulness of alternative tools to support their practice.

Furthering the discussion on the increasing popularity and potential limitations of e-portfolios, Kervin, Bennett and Neilsen-Hewett in Chap. 5 focussed on the use of e-portfolios for documenting experiences and learning. The services in their exploratory study used the selected e-portfolio platform as a tool for engaging with parents, to help them understand what was happening in the service and how their children were engaging in learning experiences. Whilst the e-portfolio was seen by teachers as a reciprocal communication channel, as this chapter illustrated, what was shared simply documented what children were doing rather than presenting analyses of children's learning or making learning explicit. As Kervin and colleagues conclude, teachers privileged adults' voices over children's; they were challenged by workload demands and were uncertain how to use the e-portfolio to meet both children's and parents' needs. Kervin, Bennett and Neilsen-Hewett propose that further debate is needed on assessment frameworks that invite reflection and discussion and that teachers need support to understand and effectively use multimodal approaches to assessment. From an international perspective, these findings offer a cautionary



tale as to the unintended consequences when tools (in this case an e-portfolio) developed in one cultural context are exported into another without the accompanying learning opportunities for how to use such tools effectively for assessment, rather than information sharing, purposes.

Kervin, Bennett and Neilsen-Hewett's chapter also highlights the importance of purposeful assessment in order to inform intentional teaching. They found that teachers' roles in extending learning or exemplifying how their intentional, reflective or responsive practices to support learning within play scenarios were not highlighted in the information posted to parents on the e-portfolios. The importance of undertaking assessment to inform intentional planning and teaching to support children's learning and development has also been a key theme in other chapters in this volume.

The issue of intentional teaching as a result of experimenting with approaches to assessment is also explored in Chap. 7 by Kristin Karlsdottir and Johanna Einarsdottir. They explored how teachers develop and implement innovative assessment approaches and use the data gathered to support intentional teaching of children. Drawing inspiration from writing about learning stories by Carr (2001), Carr and Lee (2012) and project approaches from Reggio Emilia (Rinaldi, 2004), these teachers and researchers were concerned with assessment being contextually and culturally responsive and appropriate. They argue that assessment should be formative, strengths based, capture child interest and foster a sense of agency, whilst recognising the tensions with the international drive for more formalised assessments. The focus of their study was on child-friendly assessment—a principled view of assessment as positive and supporting learning, whilst ensuring that children's views were more visible in assessment documentation. Their particular focus was on the use of effective documentation to support professional identity, as well as children's learning. They argue that child-friendly assessment fosters teachers' pedagogical leadership and helps to transform teaching practice. Like other authors, they identified that teachers' ability to engage in documentation was limited by time, especially for preparation and reflection. Although the participant teachers valued the principle, they found it difficult to meaningfully engage children in documentation and reflection. However, findings showed that different approaches to assessment, such as learning stories, offered teachers new insights not available from traditional methods. Teachers found this exciting and stimulating and both teachers and children were more empowered. Despite the limitations of the time involved, findings suggested that teachers valued the alternative approaches, especially in terms of engaging more with families in relation to assessment. They also identified that technology offers a valuable tool to make documentation accessible and more engaging for children and families.

## 15.7 Domain Lenses

Another theme that this volume has identified is that teachers can use a wider range of assessment tools to identify learning and development across a range of domains

of development. As several authors proposed, different tools can provide different insights into children's learning. Although authors advocate for approaches which capture children's holistic development, they also offer insights into how data systems can highlight learning strengths and needs across developmental domains.

For example, in Chap. 4, Rai, Fler and Fragkiadaki examine the assessment of higher-order thinking through a STEM lens in their Conceptual PlayWorld project. This chapter has a strong focus on how assessment of children's thinking can be matched with Vygotsky's notion of the leading activities of different cultural ages or periods of development, in which development of thinking processes can be seen in relation to the demands of cultural expectations. They propose that everyday imaginative play worlds offer a context for creating learning and assessment opportunities. In particular, Rai, Fler and Fragkiadaki were interested in the connections between scientific or STEM thinking and the development of psychological functions/higher-order thinking skills, such as logical thinking, focussed attention, mediated memory, imagination and problem-solving. They propose that although teachers espouse cultural historical theory, they are torn between this underpinning theory in curriculum and traditional approaches to assessment of young children and regularly face a mismatch issue. They argue for a sociocultural-situated perspective on assessment, which includes the importance of assessing children within their Zone of Proximal Development. They further argue the importance of the social context for development for ensuring there are connections between the everyday and the science world for children. In this chapter, they show how analysis of a child's interactions in PlayWorld can provide a form of assessment, when paired with perspectives gained from a parent. They also argue for a particular use of the term diagnostic assessment, which they propose refers to the best performance of children in context and which informs the educator about what to do and how to support, rather than focussing on an end point or outcome in children's learning. In this way, assessment is dynamic and constitutes a pairing of assessment with teaching and learning, whilst paying attention to children's progress overtime. They argue that meaningful, purposefully created play contexts offer opportunities for teachers to gather authentic assessment and enhance their use of intentional teaching.

Also, focussed on the uses of assessment to support learning across domains, Sue Emmett in Chap. 9 provided a useful insight into assessment of children's emotional well-being. She argues that teachers need models to guide children's emotional learning and well-being. This chapter presents data from a longitudinal study into the impact of a preservice course on student-teachers' practice at graduation and 30 months later. The project measured impact through project-developed observation descriptors and assessment scales. In this chapter, she describes the assessment tools and presents two case examples of teachers' practices. Emmett argues that within a strengths-based approach, educators must still be able to identify and understand vulnerability, and that children need support to develop resiliency and cope with vulnerability.

## 15.8 Conditions that Support Assessment

Across the chapters presented in this volume, there is considerable evidence about the conditions and supports that enable early childhood practitioners to engage in effective assessment of young children's learning and development. Regardless of which approaches to assessment are being used by educators, time emerges as a key condition: both in terms of having sufficient time to undertake and document assessments and in relation to how assessment practices are embedded within broader curriculum planning in order that assessments are timely, formative and provide guidance to teachers about children's next learning steps. In relation to this second issue, Cameron's work (Chap. 3) has highlighted how learning stories are often completed by New Zealand teachers in a timeframe that either does not allow these assessments to be used formatively to support intentional planning or, where planning does result, that the time lag is such that children's interests and learning may have moved on from that described in the documentation. Fundamental to this issue is the time teachers have available to undertake observations, and to analyse, reflect on and document the resulting information. Cherrington et al.'s (Chap. 13) and Aspden et al.'s (Chap. 14) companion chapters underscore the importance of additional time—created through the provision of funding for teacher release—for the teaching teams in their research to learn about and use new data systems for gathering assessment information. Such release time enabled teacher–researchers to collect and manage observational data for their partner kindergarten teams and created the space for teaching teams to engage with and discuss these data and their implications for their practice and children's curriculum experiences and learning. A different perspective on time was evident in Morrissey et al.'s chapter (Chap. 6): their research highlighted the importance of teachers slowing down in their day-to-day practice and taking the time to really notice what was happening for children in their play. They argued that when teachers had a shared vision for teaching and learning along with tools that could help them focus their noticing that they were able to engage in noticing as an assessment practice alongside their pedagogical interactions.

A second key support for teachers to be able to engage in effective practice, including assessment practice, is the provision of ongoing professional learning and development (PLD) opportunities (Egert et al., 2018), whether as part of initial teacher education programmes or through in-service education. The importance of such professional learning is acknowledged at a policy level—for example, McLachlan and McLaughlin (Chap. 2) note the ongoing professional learning funded by the New Zealand Ministry of Education in support of new assessment initiatives in that country. Professional learning is also valued by ECE organisations to support their teachers' engagement in assessment practice. For instance, teachers in the two centres in Kervin, Bennett and Neilsen-Hewett's (Chap. 5) research had participated in professional learning around how to use the e-portfolio platform their organisation had signed up for. The authors note, however, that they had not yet learned the sophisticated skills needed to digitally represent the episodes that they were documenting in ways that reflected children's perspectives of their learning and met the needs

of parents and teachers so that children's learning could be understood, reflected upon and further planned for. Professional learning in relation to specific domains of knowledge or learning typically begins in initial teacher education programmes. Sue Emmett's chapter (Chap. 9) shared evidence from her longitudinal study where student teachers had been introduced to professional knowledge regarding vulnerability and resilience in children and how teachers might recognise and set in place appropriate supports for children, both individually and as parts of the group within the ECE setting. Her results, having collected data on these students' practice upon graduation and thirty months later, indicate the importance of ongoing professional learning to support teachers to build on and solidify their initial learning.

Whilst learning around assessment practices and tools may occur in formal PLD contexts, professional learning also occurred for teachers as they participated in the research projects reported in many of the chapters. In some projects, professional learning was deliberately built into the research design, such as in Cherrington et al.'s and Aspden et al.'s chapters where teaching teams were supported and coached in making sense of and using data to understand children's curriculum experiences and learning (Chap. 13), whilst teacher-researchers were given extensive training and support to enable them to take on pedagogical leadership roles as they supported their own and a partner kindergarten team to collect data using a range of unfamiliar data tools (Chap. 14). Morrissey et al.'s research (Chap. 6) also embedded ongoing professional learning into one of the research projects that they discuss that introduced and supported teachers to use unfamiliar *attentional* tools to use when teaching, observing and being with children in the outdoors.

Finally, a finding that emerged across chapters is that effective use of data systems requires good leadership. Introducing new approaches to assessment using a range of data collection tools requires lead teachers to be confident and competent in the use of the tools and able to inspire other teachers that use of data systems will enhance practice. Leaders obviously can't do this without significant professional learning and development to ensure they have robust knowledge and skills to share with others, and this is not something that can be left to chance. ECE services need to budget time and resources to upskill curriculum leaders to champion new approaches. As Chap. 14 demonstrated, this requires both upskilling of curriculum leaders and the building of trust with organisational management so that the new strategies are understood and appreciated. The role of the teacher-researcher is highlighted in these findings. Teacher-researchers need to learn how to use data systems and to analyse data and to develop a sense of identity as pedagogical leaders and researchers. Although there are tensions in this role, primarily, because of tensions between being a teacher and a researcher in the same setting, there are also opportunities for these curriculum leaders to offer opportunities to transform practice, which are invaluable. The teacher-researcher role sits in new space in the literature between teacher-as-researcher and teacher and researcher partnerships, which is worth of further investigation in assessment research.

## 15.9 Summary and Conclusion

As the chapters in this volume have shown, it is time to think differently about assessment practice in early childhood settings. The chapters in this volume have provided insights into how assessment and data systems are understood in early childhood, how these understandings have changed over time and the potentialities for assessment and data in ECE settings. Thinking differently or expanding our thinking about the perception of data, approaches to assessment, documentation, collaborating with families for assessment and the role of children in assessment including giving younger children a voice and an agentic role in their own assessment in ECE were highlighted by many authors. Although there is arguably further work to do to examine how assessment of infants and toddlers can be strengthened, the possibilities for enhancing teachers' practice through the use of new assessment and data systems to reveal new insights and opportunities offer exciting possibilities for strengthening the early childhood teaching profession.

There are obviously caveats presented in all chapters. Just telling teachers to use a wider range of systems is not going to be successful. This is part of the long-term strategy. We need to ensure that teachers are supported to build a wide and deep skill set for using assessment data systems in their initial teacher education. They also need opportunities to observe their use on their professional placements by skilful mentors. On graduation, beginning teachers will need support as they enter the profession to put their emerging skill set into practice and to use it meaningfully to identify how to support children's emerging learning and development and to use appropriate pedagogies to amplify learning. In addition, the research has shown that there are some very entrenched and sometime ideologically bound attitudes that gathering data about children is inherently harmful, so there is work to do to enlighten those teachers who are at the far end of the pendulum swing of perspectives of assessment. Finally, there is much to celebrate—there is evidence that the pendulum is shifting within the early childhood sector, and we are entering a new world of possibilities. We look forward to where the present body of work will take the profession.

## References

- Akers, L., Del Grosso, P., Atkins-Burnett, S., Monahan, S., Boller, K., Carta, J., & Wasik, B.A. (2015). *Research brief—tailored teaching: The need for stronger evidence about early childhood teachers' use of ongoing assessment to individualize instruction*. Research Brief OPRE Report #2015–59. Mathematica Policy Research
- Anthony, G., McLachlan, C. J., & Lim, F. P. (2015). Narrative assessment: Making mathematics learning visible in early childhood settings. *Mathematics Education Research Journal*, 27(3), 385–400.
- Bagnato, S.J. (2007). *Authentic assessment for early childhood intervention: Best practices*. The Guilford Press.

- Bagnato, S. J., Goins, D., Pretti-Frontczak, K., & Neisworth, J. (2014). Authentic assessment as “best practice” for early childhood intervention: National consumer validity research. *Topics in Early Childhood Special Education, 34*(2), 116–127.
- Barron, B., & Darling Hammond, L. (2008). How can we teach for meaningful learning? In L. Darling-Hammond (Ed.), *Powerful Learning: What we know about Teaching for Understanding*. Jossey Bass.
- Blaiklock, K. (2012). It is difficult to review the quality of education if you don’t know what children are learning: ERO and self-review of early childhood services. *New Zealand Research in Early Childhood Education, 15*, 1–10. <https://doi.org/10.3316/informit.183071498626691>
- Bocala, C., & Boudett, K. P. (2015). Teaching educators habits of mind for using data wisely. *Teachers College Record, 117*(4), 1–20.
- Bradbury, A. (2015). Learning, assessment and equality in early childhood education (ECE) settings in England. *European Early Childhood Research Journal, 22*(3), 347–354.
- Brooker, L. (2010). Learning to play or playing to learn? Children’s participation in the cultures of homes and settings. In L. Brooker & S. Edwards (Eds.), *Engaging Play* (pp. 39–53). Open University Press.
- Carr, M. (2001). *Assessment in early childhood settings: Learning stories*. Paul Chapman Publishing.
- Carr, M., & Lee, W. (2012). *Learning stories: Constructing earner identities in early education*. Sage.
- Carr, M., Mitchell, L., & Rameka, L. (2016). Some thoughts about the value of an OECD international assessment framework for early childhood services in Aotearoa New Zealand. *Contemporary Issues in Early Childhood, 17*, 450–454. <https://doi.org/10.1177/1463949116680705>
- Cooper, M. (2017). Reframing assessment: Reconceptualising relationships and acknowledging emotional labour. *Contemporary Issues in Early Childhood, 18*(4), 375–386.
- Cooper, M., Hedges, H., & Dixon, H. (2014). Weaving RIE with Te Whāriki: Re-thinking family involvement in assessment of learning dispositions. *Early Child Development and Care, 184*(5), 733–748.
- Crooks, T. (1988). The impact of classroom evaluation practices on students. *Review of Educational Research, 58*(4), 438–481.
- Dahlberg, G. (2009). Policies in early childhood education and care: potentialities for agency, play and learning. In J. Qvortrup, W.A. Corsaro & M.S. Honig (Eds.) *The palgrave handbook of childhood studies* (pp. 228–237). Palgrave Macmillan. [https://doi.org/10.1007/978-0-230-27468-6\\_16](https://doi.org/10.1007/978-0-230-27468-6_16).
- Darling-Hammond, L., & Snyder, J. (1999). Authentic assessment of teaching in context. *Teaching and Teacher Education, 16*, 523–545.
- Datnow, A., & Hubbard, L. (2016). Teacher capacity for and beliefs about data-driven decision making: A literature review of international research. *Journal of Educational Change Change, 17*, 7–28. <https://doi.org/10.1007/s10833-015-9264-2>
- Earl, L.M., & Timperley, H. (2009). Understanding how evidence and learning conversations work. In L.M. Earl & H. Timperley (Eds.), *Professional learning conversations: Challenges in using evidence for improvement. professional learning and development in schools and higher education* (Vol. 1, pp. 1–12). Springer. [https://doi.org/10.1007/978-1-4020-6917-8\\_1](https://doi.org/10.1007/978-1-4020-6917-8_1).
- Egert, F., Fukkink, R. G., & Eckhardt, A. G. (2018). Impact of in-service professional development programs for early childhood teachers on quality ratings and child outcomes: A Meta-Analysis. *Review of Educational Research, 88*(3), 401–433. <https://doi.org/10.3102/0034654317751918>
- Espinosa, L. (2012). Assessment of young English-Language learners. In C.A. Chapelle (Ed.), *The encyclopedia of applied linguistics*. <https://doi.org/10.1002/9781405198431.wbeal0057>.
- Featherstone, S. (2011). *Catching them at it: Assessment in the early years*. A & C Black.
- Fleer, M., & Robbins, J. (2006). Diversity in the context of universal early childhood education: Family involvement or family exclusion? In M. Fleer, S. Edwards, M. Hammer, A. Kennedy, A. Ridgway, J. Robbins, & L. Surman (Eds.), *Early childhood learning communities: Sociocultural research in practice* (pp. 57–69). Pearson.

- Gluckman, P. (2011). *Improving the transition: Reducing social and psychological morbidity during adolescence*. A report for the Prime Minister's Chief Science Advisor. Office of the Prime Minister's Science Advisory Committee.
- Gordon Commission. (2012). *To assess, to teach, to learn: A vision for the future of assessment. Technical report executive summary*. [http://www.gordoncommission.org/rsc/pdfs/technical\\_report\\_executive\\_summary.pdf](http://www.gordoncommission.org/rsc/pdfs/technical_report_executive_summary.pdf).
- Grisham-Brown, J., Hallam, R., & Brookshire, R. (2006). Using authentic assessment to evidence children's progress toward early learning standards. *Early Childhood Education Journal*, 34(1), 45–56.
- Karlsdottir, K., & Garoarsdottir, B. (2010). Exploring children's learning stories as an assessment method for research and practice. *Early Years: An International Journal of Research and Development*, 30(3), 255–266.
- McLachlan, C., Edwards, S., Margrain, V. & McLean, K. (2013). *Children's learning and development: Contemporary assessment in the early years*. Palgrave Macmillan.
- McLachlan, C. (2017). Assessment in early childhood education. In L. Meyer (Ed.), *Oxford bibliographies in education*. Oxford University Press. <https://doi.org/10.1093/OBO/9780199756810>.
- McLaughlin, T., Cherrington, S., McLachlan, C., Aspden, K., & Hunt, L. (2020). Building a data culture to enhance quality teaching and learning. *Early Childhood Folio*, 24 (2). <https://doi.org/10.18296/ecf.242.2020>.
- Ministry of Education. (1996). *Te Whāriki. He Whāriki Mātauranga mō ngāmokopuna o Aotearoa. Early childhood curriculum*. Learning Media.
- Ministry of Education. (2017). *Te Whāriki. He Whāriki Mātauranga mō ngāmokopuna o Aotearoa. Early childhood curriculum*. <https://www.education.govt.nz/assets/Documents/Early-Childhood/ELS-Te-Whariki-Early-Childhood-Curriculum-ENG-Web.pdf>.
- Mitchell, L. & Cubey, P. (2003). *Professional development in early childhood settings: Best evidence synthesis iteration (BES)*. <https://www.educationcounts.govt.nz/publications/series/2515/5955>.
- Moss, P., Dahlberg, G., Grieshaber, S., Mantovani, S., May, H., Pence, A., Rayna, S., Swadener, B., & Vandenbroeck, M. (2016). The organisation for economic co-operation and development's early learning study: Opening for debate and contestation. *Contemporary Issues in Early Childhood*, 17(3), 343–351. <https://doi.org/10.1177/2F1463949116661126>
- Nah, K. (2014). Comparative study of child assessment practices in English and Korean preschools. *European Early Childhood Education Research Journal*, 22(5), 660–678.
- Pence, A. (2016). Baby PISA: Dangers that can arise when foundations shift. *Journal of Childhood Studies*, 41(3), 54. <https://doi.org/10.18357/jcs.v41i3.16549>
- Phair, R. (2021). International early learning and child well-being study assessment framework. *OECD Education Working Papers*, No. 246, OECD Publishing. <https://doi.org/10.1787/af403e1e-en>.
- Phair, R. (2015). *Improving early learning outcomes: The contribution of international comparative data*. OECD.
- Phillips, L.G., Ritchie, J. & Adair, J.K. (2020). Young children's citizenship membership and participation: Comparing discourses in early childhood curricula of Australia, New Zealand and the United States. *Compare: A Journal of Comparative and International Education*, 50(4), 592–614. <https://doi.org/10.1080/03057925.2018.1543578>
- Podmore, V. (2006). *Observation: Origins and approaches to early childhood research and practice*. NZCER.
- Rinaldi, C. (2004). *In dialogue with Reggio Emilia: Listening, researching and learning*. Routledge.
- Ruscoe, A., Barblett, L., & Barratt-Pugh, C. (2018). Sharing Power with Children: Repositioning Children as Agentic Learners. *Australasian Journal of Early Childhood*, 43(3), 63–71. <https://doi.org/10.23965/AJEC.43.3.07>
- Shildkamp, K., Poortman, C.L., Luyten, H. & Ebbeler, J. (2015). Factors influencing the functioning of data teams. *Teachers College Record*, 117(4). <https://doi.org/10.1080/09243453.2016.1256901>.



- Snow, C.E. & Van Hemel, S.B. (Eds.) (2008). *Early childhood assessment: Why, what and how. Report of the Committee on Developmental Outcomes and Assessment for Young Children for the National Research Council*. National Academies Press.
- Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2010). *Early childhood matters*. Routledge.
- Timperley, H. & Robinson (2001). Achieving school improvement through challenging and changing teachers' schema. *Journal of Educational Change*, 2(4), 281-300.
- Timperley, H. (2010). *Using evidence in the classroom for professional learning*. Paper presented to the Ontario Education Research Symposium. [https://www.researchgate.net/publication/242475272\\_Using\\_Evidence\\_in\\_the\\_Classroom\\_for\\_Professional\\_Learning](https://www.researchgate.net/publication/242475272_Using_Evidence_in_the_Classroom_for_Professional_Learning).
- United Nations. (1989). *Convention on the rights of the child*. <https://www.ohchr.org/en/professionalinterest/pages/crc.aspx>.
- Vygotsky, L. S., & Rieber, R. W. (Ed.). (1998). *The collected works of L. S. Vygotsky*, (Vol. 5). *Child psychology*. (M. J. Hall, Trans.). Plenum Press.
- Vygotsky, L. S. (1986). *Thought and language*. MIT Press.
- Zhang, Q. (2015). Advocating for a comprehensive approach to assessment in New Zealand early childhood education. *NZ Research in Early Childhood Education*, 18, 67–79.
- Zhang, Q. (2017). Do learning stories tell the whole story of children's learning? A phenomenographic enquiry. *Early Years*, 37, 255–267.

**Claire McLachlan** is Executive Dean of the Institute of Education, Arts and Community at Federation University Australia. This role involves leadership of the Institute across six regional campuses in Victoria. Prior to this appointment, she was Dean of the School of Education at Federation, Head of School for Te Hononga, the School of Curriculum and Pedagogy in the Faculty of Education, University of Waikato, and Professor of Childhood Education at Massey University, where she taught courses on languages, literacies, cognition, pedagogy, assessment and evaluation. She has also supervised over 60 HDR students, including ten doctoral completions to date. She has published 9 books, has over 200 research outputs, and has received over \$6 million in research and consultancy funding. Her primary field of research is early childhood education, and her platform of research is focused on literacy, physical activity, curriculum, pedagogy, assessment and evaluation. In addition to personal research, she has undertaken wide ranging evaluation research for three government Ministries in New Zealand; and internationally, she has provided consultancy for the Semarang State University (UNNES) in Central Java, Indonesia and the New Zealand Ministry of Foreign Affairs for education in Tokelau. She is currently Deputy President of the Victorian Council of Deans of Education, the Victorian representative on the Australian Council of Deans of Education, a member of the UNESCO-IBE Early Reading Panel, the New Zealand Ministry of Education Early Childhood Research Policy Forum and the Australian Centre for Policy Development's intergovernmental Council for Early Childhood Development.

**Tara McLaughlin** is a Senior Lecturer in Early Years Education and the founder and director of the Early Years Research Laboratory in the Institute of Education at Massey University. Prior to this appointment, she was a Research Scientist at the University of Florida in the Anita Zucker Center for Excellence in Early Childhood Studies. As a teacher, teacher educator and researcher in Early Years, she is committed to supporting learning environments that promote diverse and equitable opportunities for all children and families. She maintains an active research programme in range of topics related to early learning supports and services for young children, including children with disabilities, their families, and the teachers and specialists who serve them. Her research focuses on inclusive high-quality early intervention and early childhood education. Key focus areas include exploring (a) evidence-based, intentional and social-emotional teaching practices; (b) assessment and data-informed teaching; and (c) innovative professional learning and development. Her research uses an eclectic mix of research methods including statistical techniques and a focus on measurement quality in educational research. She is currently the lead investigator



in the data, knowledge, action projects, funded by the Teacher Led Innovation Fund (TLIF) and Teaching, Learning, Research Initiative (TLRI).

**Sue Cherrington** is an Associate Professor in the School of Education and is Director of the Institute for Early Childhood Studies at Victoria University of Wellington. She has an extensive background in early childhood education, as both a kindergarten teacher and in early childhood teacher education. Her overarching research focus is on professional and pedagogical practices in ECE. Within this broad focus, her research concentrates on EC teacher thinking and reflection, including the use of video to support collective thinking and reflection; teacher professional learning and development, particularly through professional learning communities (PLC) and the evaluation of professional development programmes for EC practitioners; teachers' ethical and professional experiences and practices; teachers' professional and pedagogical responses to working with diverse children and families; and investigation of the use of innovative data collection tools for use by teachers in ECE settings. She has developed methodological expertise in the use of video stimulated recall methods within educational settings.

**Karyn Aspden** is a Senior Lecturer in Early Years Education in the Institute of Education at Massey University. She began her career as a teacher and leader in a range of early childhood services, before moving into initial teacher education. She is Programme Coordinator of the Graduate Diploma of Teaching (ECE). Her teaching areas include leadership in early childhood education, studies of infants and toddlers, professional practice and early intervention. She is passionate about supporting both student teachers and experienced teachers to enhance their professional skills and knowledge, to be effective, informed and intentional teachers of young children. Her research interests include practicum, effective teaching practice, early intervention and infant and toddler pedagogy. The importance of meaningful and responsive relationships is the thread that weaves through each of these areas.