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# Contemporary Issues in Early Childhood Education and Care

*Edited by Nesrin Ozturk*

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IntechOpen Book Series

# Education and Human Development

Volume 27

## Aims and Scope of the Series

Education and Human Development is an interdisciplinary research area that aims to shed light on topics related to both learning and development. This Series is intended for researchers, practitioners, and students who are interested in understanding more about these fields and their applications.

# Meet the Series Editor

Katherine Meltzoff received her BA in Psychology from Trinity College, in Connecticut, USA and her Ph.D. in Experimental Psychology from the University of California, San Diego. She completed her postdoctoral work at the Yale Child Study Center with Dr. James McPartland. Dr. Meltzoff' doctoral dissertation explored neural correlates of reward anticipation to social versus nonsocial stimuli in children with and without autism spectrum disorders (ASD). She has been a faculty member at the University of California, Riverside in the School of Education since 2016. Her research focuses on translational studies to explore the reward system in ASD, as well as how anxiety contributes to social challenges in ASD. She also investigates how behavioral interventions affect neural activity, behavior, and school performance in children with ASD. She is also involved in the diagnosis of children with ASD and is a licensed clinical psychologist in California. She is the Assistant Director of the SEARCH Center at UCR and is a faculty member in the Graduate Program in Neuroscience.

# Meet the Volume Editor

Dr. Nesrin Ozturk holds a BA, minor, and MS from Middle East Technical University in Ankara, Turkey. A Fulbright Scholar, she earned her doctorate in Reading Education from the Department of Curriculum and Instruction at the University of Maryland, College Park, USA. Her scholarly work includes numerous publications on instructional design, thinking skills, metacognition, ethics, and educational philosophy. She actively contributes to the academic community through her involvement on editorial boards, conference committees, and scientific panels. Her commitment to fostering a just society drives her efforts to empower youth and promote intellectual freedom. For Dr. Ozturk, self-reflection is a key avenue to unlocking human potential and achieving peace. She is a faculty member at Izmir Democracy University in the Department of Educational Sciences, Turkey

# Contents

# Preface

Early childhood education has recently witnessed advancements in research, innovative pedagogical frameworks, and technology integration. These developments have opened new avenues for enhancing learning experiences while addressing diverse developmental needs. Contemporary Issues in Early Childhood Education and Care brings together diverse perspectives and evidence-based insights to address critical issues and explore novel approaches in early childhood education. We hope this collection will serve as a valuable resource for educators, researchers, policymakers, and anyone committed to fostering the holistic development of young learners.

Section 1: *Innovations and Insights in Early Childhood Education* highlights cutting-edge advancements that can redefine learning in early childhood. Chapter 1, "Exploring AI Tools in Early Childhood Education: Usage Patterns, Functions, and Developmental Outcomes", presents a compelling examination of how AI technologies, such as conversational agents and social robots, revolutionize preschool education. This chapter explores their impact on language development, emotional growth, and personalized learning experiences by providing a detailed analysis. It underscores the transformative potential of AI tools to create adaptive learning environments and offers guidance for their effective integration into educational settings.

Chapter 2, "Perspective Chapter: Multimodal Communicative Behaviours in Shy Children in Assessment Situations and Social Evaluative Contexts", explores how technology and innovative assessment methods can support shy children. This chapter highlights these children's challenges in verbal and non-verbal communication and provides practical strategies to create assessment environments that foster confidence and engagement. By leveraging tailored approaches, the chapter aims to unlock the potential of shy children in social and academic contexts.

Chapter 3, "Statistical Analysis for Variate Relationships in the South African ECD System", employs advanced data analysis to unravel the intricate dynamics of early childhood development in South Africa. By examining factors such as child health, ECD quality, and family structure, the chapter provides actionable insights to address educational inequities and inform policy-making. It illustrates the interconnected nature of social and educational factors, emphasizing the need for holistic strategies to promote equity and development.

Section 2: *Building Bridges: Equity, Participation, and Inclusion in ECE* underscores the importance of creating inclusive and equitable educational environments that honor diversity and foster active participation. Chapter 4, "Conditions for Children's Participation in Community in the Context of ECEC", emphasizes the pivotal role of trust, acceptance, and community orientation in enabling children to engage with their peers and educators meaningfully. Through a thorough analysis, this chapter provides a blueprint for fostering democratic practices in early education, ensuring that all children have a voice.

Chapter 5, "Perspective Chapter: Stress and Children – Playgrounds to Build Physiological and Psychological Resilience to Children's Community Capacity", reimagines playgrounds as transformative spaces that promote resilience and holistic development. This chapter demonstrates how innovative designs can mitigate stress and enhance children's physical and psychological well-being by integrating natural elements into play environments. It presents a compelling case for the role of thoughtfully designed playgrounds in fostering community and individual growth.

Chapter 6, "Perspective Chapter: Entrepreneurial Coaching as a Framework for Enhancing Participation and Lifelong Learning in Preschool Education", introduces a forward-thinking framework for empowering educators. This chapter discusses how entrepreneurial coaching can inspire participation, inclusivity, and lifelong learning. It aligns with global educational goals and provides practical insights into fostering democratic and inclusive preschool environments.

Chapter 7, "Pathways of Hope, Breaking Barriers: Refugee and Immigrant Women Leading Change in Early Childhood Workforce", chronicles the transformative journeys of marginalized women overcoming systemic barriers to contribute to early childhood education. This chapter highlights community-driven initiatives that foster equity, professional growth, and cultural inclusion. Through these stories, it showcases the resilience and determination of individuals shaping the future of early education.

Section 3: *The Growing Child: Developmental Perspectives* delves into the intricacies of development by offering practical and theoretical insights into nurturing young children. Chapter 8, "Perspective Chapter: Metacognition in Early Childhood – Factors for Development and Practices of Assessment", sheds light on the rapid growth of metacognitive skills in children aged 3 to 7. It details how educators can design learning environments, tasks, and assessment practices that stimulate reflective thinking and self-awareness. By focusing on these strategies, the chapter highlights the critical role of metacognition in lifelong learning.

Chapter 9, "Capturing Childhood Thoughts: This COVID Thing is a Serious Thing – You Can't Cough or Sneeze in Peace", captures the unique psychological experiences of a child during the COVID-19 pandemic. Through poignant narratives and research, this chapter advocates empathetic engagement and the inclusion of children's voices in addressing their concerns. It provides valuable insights into how children perceive and respond to crises, offering guidance for future challenges.

Chapter 10, "Perspective Chapter: Slow Pedagogy Approach vs Hurried Schooling in Early Childhood" critiques the increasing pressure for accelerated learning in early education. Advocating for a slow pedagogy approach, the chapter highlights the importance of creativity, well-being, and reflective learning experiences for young learners. It makes a strong case for prioritizing meaningful engagement over hurried schooling practices.

Section 4: *Foundations and Frameworks for the Future of ECE* explores foundations and emerging trends that will shape the trajectory of early childhood education. Chapter 11, "Perspective Chapter: Parenting, the Christian Perspective" examines

parenting from a spiritual standpoint, offering a thoughtful reflection on raising children with love, acceptance, and a deep sense of responsibility. The chapter draws on theological insights to highlight the values and principles that guide parenting practices within a faith-based context.

Chapter 12, "Perspective Chapter: How Evidence Changes Practice and Vice Versa – A Framework for Describing Knowledge Transformations in Early Childhood Education", provides a robust framework for understanding the interplay between research and practical application. It highlights how theoretical insights drive actionable strategies and how real-world experiences refine academic understanding, ensuring a dynamic exchange between knowledge and practice. By emphasizing this interplay, the chapter underscores the critical role of continuous learning and adaptation in education.

As we navigate the complexities of early childhood education in an ever-changing world, this volume aspires to illuminate pathways for advancing research, practice, and policy. The collective wisdom and diverse perspectives presented here remind us of the profound responsibility and opportunity we have to shape the future by investing in our youngest learners. We hope this work will inspire meaningful dialogue and action for a better future.

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Section 1

# Innovations and Insights in Early Childhood Education

Chapter 1

# Exploring AI Tools in Early Childhood Education: Usage Patterns, Functions, and Developmental Outcomes

*Runke Huang, Yanan Bao, Yinkuo Wang and Jiameng Wei*

## Abstract

With the rapid advancement of artificial intelligence (AI) technology, its integration into educational settings has become increasingly widespread, particularly in preschool education. AI tools, such as conversational agents, social robots, and intelligent tutoring systems, are being incorporated into learning activities and daily routines, thereby enhancing various aspects of children's development. While the application of AI in education (AIEd) has been extensively studied, the majority of research has focused on higher education and K-12 settings, often overlooking the specific use of AI tools in early childhood education. This study addresses this gap by conducting a systematic literature review to explore the usage patterns, functions, and developmental impacts of AI tools in preschool education. Following the PRISMA guidelines, 17 relevant studies were reviewed. The findings reveal that AI tools, characterized by their diversity and interactivity, are effectively used both at home and in school settings, significantly contributing to the enhancement of language skills, emotional development, motivation, and other personal abilities in young children. These results underscore the importance of integrating AI tools into preschool education and offer valuable insights for preschool teachers, institutional administrators, and policymakers.

**Keywords:** preschool children, AI, artificial intelligence, early childhood education, systematic review

## 1. Introduction

Artificial intelligence (AI) has increasingly permeated various domains, including education, where its applications range from intelligent tutoring systems to AI-driven virtual reality teaching. In recent years, these advancements have extended into early childhood education (ECE), where AI tools are now being used to enhance learning experiences for young children. These tools include storytelling chatbots [1, 2], AI-driven robotic toys like PopBots [3], AI teaching systems and virtual reality

platforms [4], touchscreen mobile devices, intelligent tutoring systems [5], and various online AI platforms [6, 7].

Despite the growing integration of AI in ECE, significant challenges have been identified in applying these technologies to young learners. One major issue is young children's limited comprehension of AI tools, which hampers their ability to interact with AI as partners or teaching assistants [8]. Additionally, many AI tools fail to incorporate ethical considerations, particularly concerning cultural and ethnic diversity, which are crucial for meaningful AI-children interactions [9]. There are also concerns about the psychological impact of AI on young children, with some studies indicating that children may experience feelings of depression when engaging with AI interfaces [10]. External factors such as time constraints further complicate the effective use of AI in ECE, as the structured nature of AI interactions can sometimes limit the time available for children to engage in other educational activities.

Although research has explored the roles, characteristics, and benefits of AI educational tools, there is a lack of comprehensive reviews specifically focused on the application of AI tools in ECE, particularly for preschool-aged children. Understanding how these tools are being utilized and their specific impacts on young learners is crucial. Therefore, this study aims to systematically investigate the application of AI tools in preschools, focusing on their usage patterns, functions, and the critical assessment of their impact on the developmental outcomes of preschool children.

## 2. The growing tendency of AI in education

The concept of artificial intelligence (AI) emerged in 1956, defined as the capacity of computer systems or programs to execute tasks that typically necessitate human intelligence—such as language comprehension, problem-solving, learning, and decision-making [11]. Over the past few decades, AI has seen exponential growth, becoming an integral part of various domains including business, industry, healthcare, and education [12]. In the educational sphere, Artificial Intelligence in Education (AIEd) specifically refers to the application of AI technologies to enhance teaching, learning, and decision-making processes among key stakeholders such as students, educators, and administrators [13].

Currently, AIEd applications predominantly focus on areas such as chatbots, intelligent tutoring systems, machine learning, educational games, robotics, and data visualization [12]. For instance, Ma et al. [14] introduced an intelligent system capable of automatically grading assignments and recommending peer tutors based on students' performance and social connections. Similarly, Lin et al. [15] utilized platforms like Teachable Machine and "Machine Learning 4 Kids" to demystify data training processes, thereby engaging students directly in the construction of machine learning models.

AI's role in education can be broadly categorized into three dimensions: (1) AI as a new academic discipline, (2) AI as a direct facilitator of learning, and (3) AI as an indirect support system [16]. As a discipline, research consistently indicates that AI curricula positively impact students by enhancing their understanding of AI concepts, increasing their interest in AI, developing relevant skills, and improving learning attitudes. When serving as a direct mediator, AI offers instrumental support to educators, including automated question generation, assessment, feedback,

and monitoring, which are important to boost student engagement, motivation, and self-regulated learning [17, 18]. Additionally, AI functions as a supplementary tool, often employed for data mining and analytics to uncover patterns in student learning behaviors, thereby enabling educators to tailor teaching strategies to individual needs and foster self-directed learning [16].

In recent years, the adoption of AI in education has garnered increasing attention and demonstrated significant growth in both variety and functionality. The global Artificial Intelligence in Education (AIEd) market, valued at $0.8 billion in 2019, is projected to reach $3.7 billion by 2025, reflecting this upward trend [19]. According to survey data, 74% of teachers have integrated AI-related technologies into their classrooms, with 68% expressing the belief that AI tools can have a positive impact on children's learning experiences [19]. This trend extends even to primary education, as seen in France where schools have begun offering courses on computer technologies [20]. Additionally, many educational institutions are increasingly incorporating online learning platforms, such as Moodle, into their curricula [20]. The widespread acceptance and integration of AI in education signal its growing importance and highlight its potential as a transformative tool for the future.

## 3. AI tools in early childhood education (ECE)

Early childhood education (ECE), which typically encompasses the education and care of children aged 3 to 6 years, is a critical period for cognitive, social, and emotional development. Research consistently shows that quality early education positively influences children's brain development, social skills, emotional regulation, and foundational learning habits. With the rapid advancement of technology, AI devices such as voice-activated personal assistants, home robots, and smart connected toys are increasingly becoming a part of young children's daily lives [21]. These AI tools hold significant promise for enhancing learning and developmental outcomes in early childhood [13].

For example, Zhang and Chen [22] developed an intelligent tutoring system for math instruction specifically designed for young children. Their study demonstrated that this AI-driven course not only improved children's math performance but also helped sustain positive attitudes toward the subject. Similarly, Kandlhofer et al. [2] introduced a novel AI education concept using robotics platforms to foster AI literacy among young learners. Their findings revealed that children could successfully explore basic AI topics and grasp simplified AI concepts, laying the groundwork for early AI literacy.

However, despite the potential benefits, there are significant concerns about the application of AI tools in early childhood settings. Even the most thoughtfully designed AI systems may have inherent limitations that could negatively impact young children. Kurian [23] offers a critical analysis of the ethical implications of conversational AI on children's well-being. One concern is that AI may fail to fully address the nuanced emotional needs of young children, often providing generic or inadequate responses, which could reinforce negative cognitive patterns. Additionally, AI systems may struggle with unconventional communication or language from children, leading to illogical responses that could hinder cognitive and language development. Another critical issue is the potential for social biases embedded in the AI's training data. These biases could inadvertently perpetuate stereotypes or internalize misinformation, thereby exacerbating social biases in young children.

Given these mixed findings, it is essential to further explore the use of AI tools in early childhood education and rigorously assess their impacts on young children's development.

While previous research has provided valuable insights into the broad application of AI in education, particularly within K-12 settings, there remains a significant gap in understanding how these technologies are being implemented in ECE. Most existing reviews have focused on general educational contexts, often overlooking the unique challenges and needs associated with AI applications for preschool-aged children. Although some recent reviews have started to explore AI literacy in ECE, they tend to emphasize theoretical and pedagogical aspects rather than the practical application, user experience, and specific developmental impacts of AI tools in these settings. Given that early childhood education is foundational for children's development, there is an urgent need for more targeted investigations into how AI tools are used with young learners. Therefore, this study aims to systematically investigate the application of AI tools in ECE, focusing on preschool-aged children. It seeks to identify and categorize the types of AI tools currently in use, analyze their usage patterns and functions, and critically assess their developmental impacts, including both benefits and potential challenges. This study is guided by two key research questions:

1. What types of AI tools are being used for preschool children?

2. What are their specific usage patterns and functions?

3. What are the developmental impacts of these AI tools on preschool-aged children?

## 4. Method

This study undertakes a systematic review of AI tools in early childhood education (ECE), employing a methodology aligned with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [24, 25]. The PRISMA framework guides the process through the following key steps: identifying data sources and developing a data search strategy, establishing inclusion and exclusion criteria, conducting a rigorous screening of articles, performing a thorough analysis of the selected studies, and systematically reporting the findings.

## 5. Literature search

The literature search was conducted across several electronic databases, including all EBSCOhost databases (e.g., ERIC), Web of Science, ProQuest, Scopus, and PsycINFO. To ensure comprehensive coverage of relevant studies, the search encompassed academic articles published in any year and was performed in July 2024. The objective of this systematic review is to examine the various AI tools and features utilized by preschoolers and their impact on children's development. The search strategy employed specific terms, including "Early years education," "Early childhood education," "Early childhood," "Kindergarten," "Pre-K children," "Preschool," combined with "AI tools," "Artificial intelligence," "AI robot," "Chatbot,"

"Conversational AI," and "Social robot." Further details on the search strings are provided in **Table A1**. As illustrated in **Figure 1**, the search yielded a total of 2051 articles: 95 from EBSCO, 183 from Web of Science, 862 from ProQuest, 861 from Scopus, and 50 from PsycINFO.

The inclusion and exclusion criteria were established to ensure that the selected studies were relevant and met the review's objectives (see **Table 1**).

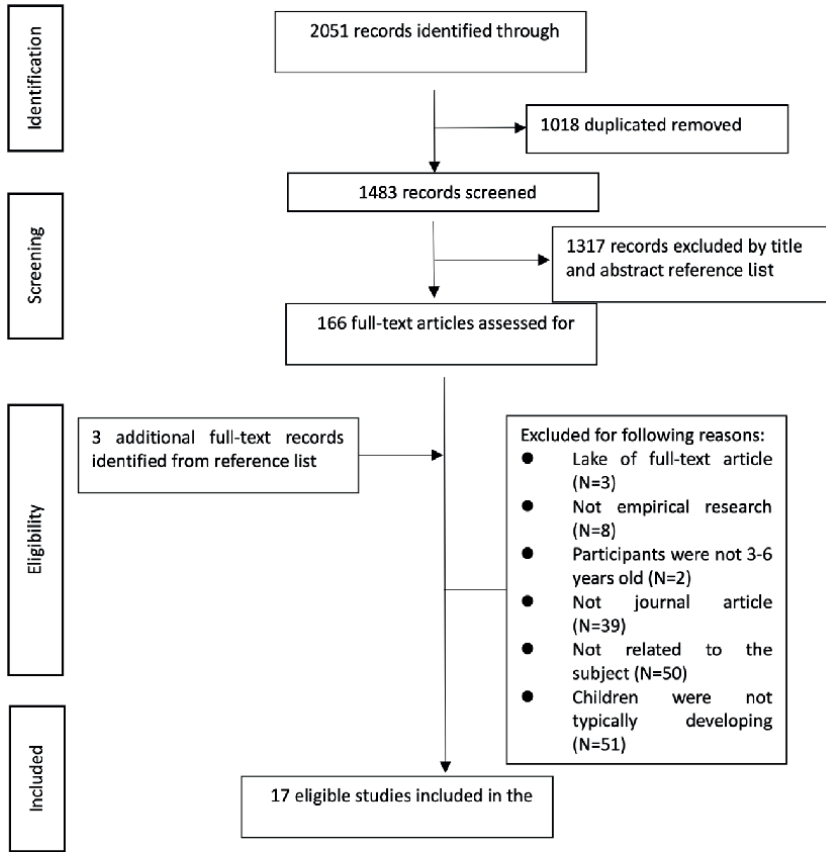


**Figure 1.**
*PRISMA diagram of included articles in the systematic review.*

| | Inclusion criteria | Exclusion criteria |
|---|---|---|
| Language | English | Not in English |
| Publication type | Peer-reviewed studies/journal articles | Editorial/Letters/Comment/Conference/Review/Book |
| Population | 3–6 years old | Not in 3–6 years old |
| Content | Related to the usage and effect of AI tools in early child education | Studies not in the field of interest, e.g., traditional chatbots rather than AI chatbot |
| Study design | Empirical research | Not empirical research |

**Table 1.**
*Inclusion and exclusion criteria.*

## 6. Research procedure

The search process for this review adhered to PRISMA guidelines. The initial database search yielded 2051 articles, which were subsequently reduced to 1483 after the removal of duplicates. Titles and abstracts were then screened, resulting in the selection of 166 studies for further evaluation. These 166 studies underwent a thorough screening based on the predefined inclusion and exclusion criteria, leading to the exclusion of 150 studies. Ultimately, 16 studies remained in the sample. Additionally, three more studies were identified through citation tracking within the selected articles. Thus, a total of 19 studies met the full inclusion criteria. Detailed information regarding the screening process and study exclusions can be found in the PRISMA Flowchart (**Figure 1**).

## 7. Data extraction and analysis

The data analysis for this systematic review was guided by the coding framework proposed by Brown et al. [26], which categorizes data into four main groups: methodological features, study quality, intervention features, and outcome measures. To ensure the accuracy and consistency of data extraction, two independent coders reviewed the selected articles using a self-developed coding scheme. This scheme captured essential information, including the author, publication date, title, country, and institution, as well as specifics such as the type of AI tools utilized, their definitions within the research context, how these tools were employed, their functions, and the impacts of their use. The coding also included details on the research aim, participants, methodology, study design, data collection methods, results, conclusions, and future implications.

To promote a shared understanding of the coding scheme, the two coders initially coded one article together, working face-to-face. This collaborative approach ensured that both coders were aligned in their interpretation of the coding criteria. Following this, the coders proceeded to code articles individually but in a back-to-back manner, consistently checking their inter-coder reliability. Once they achieved 100% agreement in their inter-coder reliability, they transitioned to independent coding of the remaining articles. This rigorous process ensured a high level of reliability and consistency in the data analysis.

## 8. Result

This systematic review analyzed 17 studies published between 2014 and 2024. The studies were conducted across various countries, with the majority originating from the United States (n = 7), followed by Australia (n = 3) and the United Kingdom (n = 2). Additional details on the characteristics of the included studies are provided in **Table A2**. The results are organized to address the research questions, focusing on: (a) the types of AI tools that are used among preschool children, along with their usage patterns and functions (addressing RQ1); and (b) the impact of using AI tools on preschool children (addressing RQ2).

## 9. AI types and functions

As shown in **Table 2**, this study identified a variety of AI tools that have been used in preschool children, including Conversational agents (N = 6), Social robots (N = 6), Educational games (N = 1), Intelligent tutors (N = 1), and AI projects (N = 3).

| AI Tools | Frequency | Example studies |
|---|---|---|
| Conversational agent | 6 | Xu and Warschauer [29]<br>Huh et al. [36] |
| Social robot | 6 | Demir-Lira et al. [34]<br>Keren and Fridin [33] |
| Educational game | 1 | Villegas-Ch et al. [30] |
| Intelligent tutor | 1 | Ruan et al. [28] |
| AI project | 3 | Yang et al. [41] |

**Table 2.**
*AI tools and functions.*

Conversational agents (CAs) are software programs designed to interact with users through natural language processing, simulating human dialog. These agents are frequently employed as consumer-oriented voice assistants, focusing on language processing and response [27]. For example, Xu and Warschauer [29] developed a CA to engage children in story-based dialog, incorporating questions and feedback to enhance comprehension and engagement. Similarly, Huh et al. [36] designed an AI voice agent capable of generating instructional questions and responses to guide preschool children in independent hygienic toilet training.

*Social robots* are autonomous or semi-autonomous systems with a physical presence that can sense and respond to environmental cues, interact with humans (or other robots), and understand and follow social rules. Typically, social robots have a human-like or animal-like appearance and perform tasks in social environments through multimodal interaction. For instance, Demir-Lira et al. [34] studied the use of a 54-cm-tall humanoid social robot (NAO), which features a child-friendly appearance and hand gestures, to assist young children in learning a second language. Keren and Fridin [33] explored the use of social robots in facilitating play activities with teachers and children, promoting geometric thinking and metacognitive development through language and gesture. Social robots, as identified in this review, were particularly effective in enhancing social-emotional learning, making them valuable tools for fostering interpersonal skills among preschool children.

*Educational games* are explicitly designed for educational purposes, combining contextualized tasks with educational content. These games often include feedback and reward systems to aid in learning specific subjects or skills. In 2022, William, Angel, and Aracely developed an AI-based game featuring an image recognition system to help children learn natural numbers ranging from 0 to 9. Although fewer studies focused on Educational games, their integration of AI suggests potential for targeted skill development in early childhood education.

*Intelligent tutors* are computer systems that provide immediate and customized instruction or feedback to learners, typically without the need for human teacher intervention. Ruan et al. [28] developed BookBuddy, a conversational AI tutoring system that automatically recommends learning materials, leads interactive tutoring conversations, and provides children with feedback to practice speaking. The limited number of studies on Intelligent tutors indicates a gap in the literature, suggesting a need for further research to explore their full potential in early education.

*AI projects* integrate multiple AI tools and techniques with other resources to achieve educational objectives through a series of activities. Yang et al. [41] developed

an AI curriculum called "AI for Kids," which introduces AI-interfaced intelligent agents like AI for Oceans, Teachable Machine, and Clearbot, aiming to enhance children's AI literacy. Kewalramani et al. [39] examined how AI robotic toys such as Alpha Mini, Coji, Qobo, and LegoBoost Bot contribute to the development of children's social-emotional literacies. Additionally, Kewalramani et al. [38] explored the use of AI toys like COSMO, Blue-Bot, Coji, Qobo, and Vernie in combination with both physical and artificial environments to foster children's inquiry literacy. These projects highlight the potential of combining various AI tools to provide comprehensive learning experiences, though further research is needed to assess their long-term impact.

## 10. Usage pattern of AI tools

The analysis of usage patterns revealed three primary themes: delivery methods, usage context, and engagement level, as summarized in the accompanying table.

*Delivery method* refers to how the AI tool is provided to or accessed by the user. The results indicate a strong preference for hardware-focused delivery methods (n = 13), where the AI tools are embedded in physical devices. Software-focused delivery methods, which involve digital platforms or applications without dedicated hardware, were less common (n = 4). Notably, no studies employed a hybrid delivery method that combines both hardware and software components (n = 0).

The findings indicate that hardware-focused delivery methods were the most commonly employed in the included studies, aligning with the results reported by Su et al. [1]. This suggests that children predominantly interact with AI tools through physical devices, such as robots or smart speakers. This preference for hardware-based AI tools could be attributed to their advanced development, widespread market penetration, and the familiarity children have with these devices. In contrast, software-based AI tools, which could increase screen time, may be less favored due to concerns about potential negative impacts on vision development and attention span [42].

*Usage context* pertains to the setting in which the AI tool is utilized. The majority of the studies reported the use of AI tools in school settings (n = 11), suggesting that these tools are primarily integrated into formal educational environments. A smaller number of studies focused on home use (n = 4), while two studies indicated no specific limitations on the context, implying that the AI tools could be used flexibly across different environments (n = 2).

AI tools were most frequently explored and applied in educational settings, likely because schools provide a controlled environment where experiments can be more easily conducted, with teachers available to ensure the smooth running of these studies. However, the classroom is not the only context for AI tool usage. Future research should explore the application of AI tools in home environments, examining the role of parents in guiding and supervising their children's use of these technologies [6]. This could offer valuable insights into how AI tools can be integrated into daily routines outside of the school setting, potentially enhancing learning opportunities at home.

*Engagement level* describes the degree and type of interaction or participation that the AI tool facilitates for the child. The analysis identified three categories: passive engagement, active engagement, and collaborative engagement. Passive engagement,

where children primarily receive information without interacting, was not observed in any of the studies (n = 0). In contrast, active engagement, where children interact directly and are actively involved in the learning process, was the most common (n = 13). Collaborative engagement, where children use the AI tool in conjunction with peers or adults, was also present but less frequent (n = 4).

The majority of studies demonstrated that children interacted with AI tools in an active manner, involving direct participation in tasks such as solving puzzles or answering questions. These interactions suggest that AI tools can effectively scaffold children's knowledge development by providing adaptive, interactive experiences [29, 39, 41]. The actively interactive AI tools described in these studies typically feature immediate feedback, child-friendly visual and auditory stimuli, and personalized settings, all of which are designed to engage young learners effectively. These characteristics should be considered when integrating AI tools into preschool classrooms and instructional settings, as they can significantly enhance the learning experience by fostering active engagement and facilitating personalized learning (**Table 3**).

| **Citation** | **AI tools** | **Classification** | | |
|---|---|---|---|---|
| | | **Delivery method** | **Usage context** | **Engagement level** |
| Xu et al. [27] | n/a | Hardware | Home | Active |
| Ruan et al. [28] | BookBuddy | Software | School | Active |
| Xu and Warschauer [29] | CA reading partner | Hardware | School | Active |
| Kory-Westlund and Breazeal [21] | Dragonbot | Hardware | School | Active |
| Yang et al. [25] | AI4Kids (system) Clearbot and Popbot (AI robot) | Hardware | School | Collaborative |
| Villegas-Ch et al. [30] | Natural number recognition system | Software | School | Collaborative |
| Cheng et al. [31] | Dialogic reading | Hardware | No limited | Active |
| Xu et al. [16] | n/a | Hardware | School | Active |
| Aslan et al. [32] | Oscar | Software | School | Active |
| Keren and Fridin [33] | KindSAR | Hardware | Not limited | Collaborative |
| Demir-Lira et al. [34] | NAO | Hardware | Home | Active |
| Halbach et al. [35] | NAO | Hardware | School | Collaborative |
| Huh et al. [36] | Ddongddong | Software | Home | Active |
| Leeuwestein et al. [37] | Robot Robin and Robot Deniz | Hardware | School | Active |
| Kewalramani et al. [38] | COSMO, Blue Bot, Coji, Qobo, Vernie. | Hardware | School | Active |
| Kewalramani et al. [39] | Alpha Mini, Coji, Qobo, LegoBoost Bot. | Hardware | Home | Active |
| Neumann et al. [40] | NAO | Hardware | School | Active |

**Table 3.**
*Usage pattern of AI tools.*

## 11. The impacts of used AI tools on child development

This analysis also categorizes the tools according to their functions, focusing on their specific impacts on child development. The functions of AI tools identified in the included studies can be grouped into four main categories: language-related, emotion-related, motivation-related, and other personal abilities.

### 11.1 Language-related impacts

The language-related benefits of AI tools were analyzed using the "four basic language learning abilities" framework, which includes listening, reading, speaking, and writing. The impacts observed were classified into three types: one-way, two-way, and three-way improvements.

- One-way impact: In this category, only one language skill was enhanced. For instance, the study by Cheng et al. [31] demonstrated that a chatbot-based storytelling system improved children's reading skills exclusively.

- Two-way impact: AI tools in this category enhanced two language skills. Leeuwestein et al. [37] introduced Robin and Deniz, two NAO social robots, which significantly benefited children's reading and speaking abilities.

- Three-way impact: The only instance of a three-way impact was found in the study by Halbach et al. [35], where children showed improvements in reading, speaking, and listening skills.

Overall, the analysis revealed that two studies demonstrated one-way impacts, four studies showed two-way impacts, and one study indicated a three-way impact. Notably, there were no significant findings related to the improvement of children's writing abilities through the use of AI tools.

### 11.2 Emotion-related impacts

AI tools also had a substantial impact on children's emotional development. Five studies highlighted how deep, engaged interactions with AI tools influenced children's emotions. The impacts included positive emotional feedback [28], enhanced emotional expression [39], and improved socioemotional competency [39]. These findings suggest that AI tools can play a significant role in fostering emotional well-being and social skills in preschool children.

### 11.3 Motivation-related impacts

A smaller number of studies (n = 3) explored how AI tools could enhance children's intrinsic motivation. For example, Huh et al. [36] introduced Ddongddong, a toilet training tool designed for preschoolers, which successfully increased children's self-autonomy and self-efficacy. This suggests that AI tools can be effective in motivating young children to develop important life skills.

### 11.4 Other personal abilities

AI tools were also found to contribute to the development of other personal abilities in children. Five studies highlighted these impacts, including research by Neumann and Koch et al. [40], which demonstrated that the use of an NAO social robot enhanced children's creativity. Additionally, the previously mentioned BookBuddy system was shown to improve children's cognitive development, particularly in terms of their elaborative abilities and logical reasoning skills. These findings indicate that AI tools can support a wide range of developmental areas beyond language and emotional growth.

## 12. Discussion

### 12.1 The types of AI tools that are used among preschool children

The findings of this study underscore the diverse and innovative applications of AI tools in preschool education, highlighting their potential to transform educational practices for young children. The identified tools—Conversational agents (CAs), Social robots, Educational games, Intelligent tutors, and AI projects—demonstrate that integrating AI technologies into existing preschool frameworks can significantly enhance the learning experience, aligning with previous research [5]. However, the adoption of these technologies also raises important considerations for the future, particularly in terms of their potential to universalize education and improve educational equity [43].

Conversational agents (CAs) emerged as the most frequently used AI tool in the reviewed studies. This prevalence is likely due to the relative maturity and ease of integration of CA technology into widely available devices and platforms, such as smart speakers and mobile applications [27]. CAs are particularly effective for dialog-based learning tasks, such as quizzing and storytelling, which are well-suited to the developmental needs of preschool children. However, a notable limitation of CAs is their lack of physical presence, as they primarily interact through speech or text. This single-dimensional interaction overlooks the importance of non-verbal communication, which is crucial for effective human-agent interactions [44]. Future research should explore ways to enhance the multimodal capabilities of CAs to better support preschool learning.

Social robots were also prominently featured in the reviewed studies and offer a solution to some of the limitations associated with CAs. The physical embodiment of social robots allows for multimodal interactions—visual, auditory, and tactile—which are more engaging for young children and better suited for social and situational learning [45, 46]. These robots can simulate social interactions and provide a more immersive learning environment, making them valuable tools in preschool education. However, the accessibility of social robots is currently limited compared to CAs, likely due to higher costs and the need for more sophisticated technology. Addressing these barriers could increase the widespread use of social robots in early childhood settings.

The limited number of studies on Educational games and Intelligent tutors suggests that these tools are less commonly employed in preschool education. Developing high-quality educational games or intelligent tutoring systems requires significant

resources and advanced algorithms, which may explain their underrepresentation. Additionally, the cognitive demands of these tools, such as the need for sustained attention, may be less suitable for preschool children, who typically have shorter attention spans. This aligns with existing research, which indicates that these AI tools are more frequently used in primary and secondary education, where students can better engage with complex and extended learning activities [12]. Future studies should explore age-appropriate adaptations of these tools to better meet the needs of younger learners.

Finally, the inclusion of three studies on AI Projects highlights the potential of integrating multiple AI tools to support various aspects of child development. These projects offer a holistic approach, combining different AI technologies to create more comprehensive educational experiences. By leveraging the strengths of multiple tools, AI projects can enhance both the efficiency and quality of teaching and learning, ultimately helping educators achieve more ambitious educational goals. Further research is needed to evaluate the long-term impact of such integrated approaches and to explore their scalability in diverse educational settings.

### 12.2 The impact of using AI tools on preschool children

AI tools have shown considerable promise in enhancing various dimensions of children's development, particularly in language acquisition, emotional growth, motivation, and broader personal abilities. These tools are not merely supplementary aids but are increasingly integral to creating dynamic, interactive learning environments that cater to the diverse needs of preschool children.

In terms of language development, AI tools such as chatbots and conversational agents (CAs) are transforming traditional literacy practices by providing interactive, adaptive learning experiences. For instance, chatbots, as evidenced by Cheng et al. [31], utilize advanced algorithms to engage children in reading activities, offering personalized feedback that enhances their comprehension and literacy skills. This interactive approach contrasts with more passive forms of learning, where children merely receive information. The conversational capabilities of CAs, as seen in the study by Xu and Warschauer [29], further amplify these benefits by fostering meaningful dialog between the AI and the child. This two-way communication not only bolsters reading skills but also significantly improves speaking abilities, highlighting the importance of interaction in language learning.

However, the impact of AI tools is not limited to dynamic interactions alone. Tools like KindSAR, discussed by Keren and Fridin [33], demonstrate that even unidirectional AI systems can effectively support language development, particularly in enhancing listening skills. These tools, which focus on content delivery through auditory and visual stimuli, provide a structured environment where children can improve their listening abilities—a foundational aspect of language acquisition. Interestingly, when AI tools, such as Dragonbot, incorporate elements like facial expressions and physical movement, they create a more immersive experience that not only facilitates language learning but also engages children on a deeper emotional level, reinforcing their language skills through active participation and social interaction.

The emotional impact of AI tools is another critical area where these technologies are making a significant difference. AI tools are increasingly designed to create positive emotional experiences, fostering an intimate bond between the child and the

technology. This is achieved through thoughtful design choices that emphasize politeness, cheerfulness, and friendly interactions. For example, tools like Ddongddong [36] and BookBuddy [28] are crafted to provide a nurturing environment that supports emotional well-being. The ability of these tools to create a positive emotional atmosphere is crucial, as it not only enhances the learning experience but also contributes to the development of socioemotional skills.

Moreover, the role of AI tools in fostering socioemotional competencies is particularly evident in robotic toys like Alpha Mini, Coji, Qobo, and LegoBoost, as explored by Kewalramani et al. [39]. These robots do more than just interact; they engage children in activities that require emotional expression and social collaboration. For instance, Coji's use of emoji language not only makes learning fun but also encourages children to articulate their emotions. Meanwhile, Qobo and LegoBoost, with their ability to perform complex sequences like dancing or singing, create opportunities for children to engage in collaborative play, thereby enhancing their socioemotional development in a way that is both engaging and educational.

Beyond language and emotion, AI tools are also instrumental in cultivating intrinsic motivation among children. These tools guide children through processes that require active participation and decision-making, which are crucial for developing self-efficacy and autonomy. For instance, the toilet training tool Ddongddong [36] exemplifies how AI can encourage children to take initiative by requiring them to follow a series of instructions, thereby boosting their sense of independence and competence. Similarly, the natural number recognition system developed by Villegas-Ch et al. [30] leverages the role-reversal dynamic, where children act as teachers, to foster a deeper engagement and responsibility in the learning process. This method of shifting control to the child is particularly effective in enhancing self-efficacy, as it empowers them to take an active role in their education.

Finally, AI tools contribute to the development of broader personal abilities such as creativity and moral reasoning. The AI4Kids program, presented by Yang et al. [41], demonstrates how AI can be used to introduce complex ethical concepts to young children. By engaging them in a scenario where they must design tools to clean an ocean polluted with garbage, the program not only teaches environmental responsibility but also encourages creative problem-solving. This blend of ethical education and creativity highlights the potential of AI tools to foster holistic development in children, preparing them not just for academic success but for the complex moral and social challenges of the future.

## 13. Conclusion

The findings of this study suggest that AI tools, such as conversational agents and social robots, hold significant potential in fostering dynamic and interactive learning environments that enhance language acquisition, emotional development, and cognitive growth in preschool children. These insights offer valuable implications for both educational practice and policy-making in early childhood education. Despite these contributions, it is important to acknowledge certain limitations of this systematic review. The relatively small number of studies included may have resulted in gaps in the findings, potentially due to the specific search criteria and strategies employed. Future research should consider expanding the screening criteria to include a broader range of studies, thereby capturing a more comprehensive picture of AI applications in early childhood education.

## Appendix

| Database | Search string |
|---|---|
| EBSCOhost (ERIC) | TX ((“Early years education” OR “Early children education” OR “Early childhood” OR “Kindergarten” OR “Pre-K children” OR “Preschool”) AND (“AI tools” OR “Artificial intelligence” OR “AI robot” OR “Chatterbot” OR “Chatbot” OR “Conversational AI” OR “Social robot”)) |
| WoS | TS = (“Early years education” OR “Early children education” OR “Early childhood” OR “Kindergarten” OR “Pre-K children” OR “Preschool”) AND TS = (“AI tools” OR “Artificial intelligence” OR “AI robot” OR “Chatterbot” OR “Chatbot” OR “Conversational AI” OR “Social robot”) |
| ProQuest | (AB(“Early years education” OR “Early children education” OR “Early childhood” OR “Kindergarten” OR “Pre-K children” OR “Preschool”) OR TI(“Early years education” OR “Early children education” OR “Early childhood” OR “Kindergarten” OR “Pre-K children” OR “Preschool”) OR SU(“Early years education” OR “Early children education” OR “Early childhood” OR “Kindergarten” OR “Pre-K children” OR “Preschool”)) AND (AB(“AI tools” OR “Artificial intelligence” OR “AI robot” OR “Chatterbot” OR “Chatbot” OR “Conversational AI” OR “Social robot”) OR TI(“AI tools” OR “Artificial intelligence” OR “AI robot” OR “Chatterbot” OR “Chatbot” OR “Conversational AI” OR “Social robot”) OR SU(“AI tools” OR “Artificial intelligence” OR “AI robot” OR “Chatterbot” OR “Chatbot” OR “Conversational AI” OR “Social robot”)) |
| Scopus | TITLE-ABS-KEY ((“Early years education” OR “Early children education” OR “Early childhood” OR “Kindergarten” OR “Pre-K children” OR “Preschool”) AND (“AI tools” OR “Artificial intelligence” OR “AI robot” OR “Chatterbot” OR “Chatbot” OR “Conversational AI” OR “Social robot”)) |
| PsycINFO | (TI “Early years education” OR TI “Early children education” OR TI “Early childhood” OR TI “Kindergarten” OR TI “Pre-K children” OR TI “Preschool” OR AB “Early years education” OR AB “Early children education” OR AB “Early childhood” OR AB “Kindergarten” OR AB “Pre-K children” OR AB “Preschool” OR KW “Early years education” OR KW “Early children education” OR KW “Early childhood” OR KW “Kindergarten” OR KW “Pre-K children” OR KW “Preschool”) AND (TI “AI tools” OR TI “Artificial intelligence” OR TI “AI robot” OR TI “Chatterbot” OR TI “Chatbot” OR TI “Conversational AI” OR TI “Social robot” OR AB “AI tools” OR AB “Artificial intelligence” OR AB “AI robot” OR AB “Chatterbot” OR AB “Chatbot” OR AB “Conversational AI” OR AB “Social robot” OR KW “AI tools” OR KW “Artificial intelligence” OR KW “AI robot” OR KW “Chatterbot” OR KW “Chatbot” OR KW “Conversational AI” OR KW “Social robot”) |

**Table A1.**
*Search string.*

| Citation | Title | Country | Setting |
|---|---|---|---|
| Xu et al. [27] | Same benefits, different communication patterns: Comparing Children’s reading with a conversational agent vs. a human partner. | United States | School of Education, University of California, Irvine, USA<br>IBM Research AI, Cambridge, USA |
| Ruan et al. [28] | BookBuddy: Turning digital materials into interactive foreign language lessons through a voice chatbot. | USA | Stanford University, Tsinghua University |
| Xu and Warschauer [29] | Exploring young children’s engagement in joint reading with a conversational agent | United States | University of California, Irvine |

| Citation | Title | Country | Setting |
|---|---|---|---|
| Kory-Westlund and Breazeal [21] | A long-term study of young children's rapport, social emulation, and language learning with a peer-like robot playmate in preschool | United States | MIT media lab, Massachusetts Institutes of Technology |
| Yang et al. [25] | Artificial intelligence education for young children: A case study of technology-enhanced embodied learning | China, Singapore | 1. The Education University of Hongkong<br>2. Nanyang Technological University<br>3. The University of Hongkong<br>4. Central China Normal University |
| Villegas-Ch et al. [30] | Assistance system for the teaching of natural numbers to preschool children with the use of artificial intelligence algorithms | Ecuador | Universidad de Las Américas, Universidad Internacional del Ecuador |
| Cheng et al. [31] | Chatbot dialogic reading boosts comprehension for Chinese kindergarteners with higher language skills | China | 1. Tsinghua University<br>2. Beijing Institute of Technology |
| Xu et al. [16] | Dialog with a conversational agent promotes children's story comprehension via enhancing engagement | United States | University of California, Irvine |
| Aslan et al. [32] | Immersive multimodal pedagogical conversational artificial intelligence for early childhood education: An exploratory case study in the wild | United States | n/a |
| Keren and Fridin [33] | Kindergarten Social Assistive Robot (KindSAR) for children's geometric thinking and metacognitive development in preschool education: A pilot study. | Israel | Ariel University |
| Demir-Lira et al. [34] | L2 vocabulary teaching by social robots: The role of gestures and on-screen cues as scaffolds. | United States, Turkey | University of Lowa, Koc University, Sabanci University. |
| Halbach et al. [35] | Robot-Enhanced Language Learning for Children in Norwegian Day-Care Centers | Norway | Norwegian Computing Center |
| Huh et al. [36] | Service Design of Artificial Intelligence Voice Agents as a Guideline for Assisting Independent Toilet Training of Preschool Children | Korea | Yonsei University |
| Leeuwestein et al. [37] | Teaching Turkish-Dutch kindergartners Dutch vocabulary with a social robot: Does the robot's use of Turkish translations benefit children's Dutch vocabulary learning? | Netherland | 1. Utrecht University<br>2. Tilburg University<br>3. University of Amsterdam<br>4. University of Groningen |
| Kewalramani et al. [38] | Using Artificial Intelligence (AI)-interfaced robotic toys in early childhood settings: a case for children's inquiry literacy | Australia, United Kingdom | Monash University, Canterbury Educational Services |

| Citation | Title | Country | Setting |
|---|---|---|---|
| Kewalramani et al. [39] | Using robotic toys in early childhood education to support children's social and emotional competencies | Australia, United Kingdom, Norway | 1. Monash University<br>2. Canterbury Educational Services<br>3. University of Arctic Norway<br>4. Swinburne University of Technology |
| Neumann et al. [40] | Young children's interactions with a social robot during a drawing task | Australia | Southern Cross University, Griffith University |

**Table A2.**
*Main characteristics of the included studies.*

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Chapter 2

# Perspective Chapter: Multimodal Communicative Behaviours in Shy Children in Assessment Situations and Social Evaluative Contexts

*Franziska E. Viertel and Nils F. Tolksdorf*

## Abstract

Shy children are characterised by reserved communicative behaviour, especially in novel situations or when interacting with unfamiliar interlocutors. Many of the contextual elicitors that trigger typical patterns of shyness reactions in children, such as gaze aversion, a more distant approach, or general hesitation, may be present in typical laboratory settings or in standardised testing situations, for example, language assessment tests. In our chapter, we review recent studies that operationalise shy children's communicative behaviour at verbal and nonverbal levels with different social partners, such as humans or social robots, as interaction partners, providing practitioners with a sound overview of communicative signals that are challenging to capture and measure in practical settings. From this, we derive critical implications for the design of testing situations for children that allow them to unfold their communicative potential and demonstrate their linguistic competence, taking into account their individual temperamental characteristics.

**Keywords:** shyness, temperament, assessment, language testing, communicative behaviour, multimodality

## 1. Introduction

Temperamental shyness, a stable yet context-sensitive trait, can profoundly influence how children engage with their environment, particularly in settings that assess social communication skills. This effect is especially pronounced in unfamiliar or socially demanding environments such as kindergarten, formal schooling, or experimental settings. In these contexts, shy children's multimodal behaviour can vary significantly, shaped by their unique temperamental characteristics. This article aims to achieve two primary goals. First, it reviews the current state of research on shy children's communicative behaviour in assessment and social-evaluative situations through the lens of both their verbal and nonverbal communicative modalities. By synthesising findings from studies across diverse contexts—including productive and receptive language assessments, group and individual settings, and interactions

with varying degrees of familiarity and with both human and robotic partners—we aim to provide a comprehensive understanding of shy children's communicative tendencies. Second, we seek to apply these insights to inform interactions with shy children in educational settings, offering practical implications for parents, teachers, and practitioners. In this way, we aim to raise awareness of the diverse and often subtle communicative behaviours of shy children, which can easily be overlooked in environments where the focus tends to be on content and learning outcomes. In this vein, understanding the behavioural patterns of shy children can inform the development of supportive educational environments and the adaptation of practices to make learning activities more accessible to a range of children. It also provides a critical opportunity for researchers and practitioners to develop assessment strategies that may provide a more accurate representation of shy children's abilities in diverse contexts. In particular, as in typical educational settings where spoken language is a primary assessment tool, shy children who may prefer alternative modes of communication may be misinterpreted or underestimated. Thus, this review aims to highlight these dynamics and propose ways to consider and assess shy children more effectively in educational contexts.

The review is structured as follows: First, we explore various conceptions of shyness, providing a foundation for understanding the trait. Second, we examine the different approaches used to measure shyness in previous studies. Thirdly, we synthesise the relevant literature on how shyness may affect children's verbal behaviour, providing a comprehensive overview of current findings with a particular focus on children's performative behaviour in language tests and interconnections with cognitive processes. Fourth, we review studies that focus on shy children's nonverbal behaviours, including gestures, gaze, affective expressions, and proxemics, to explore how shyness manifests in different communicative modalities and to discuss the adaptive nature of these communicative signals. While we acknowledge that communication is inherently multimodal, and that separating verbal and nonverbal behaviours can be somewhat artificial, this structure is employed intentionally to organise the diverse findings and make them more accessible to readers. Finally, we discuss the broader implications of these findings, offering suggestions for designing future assessments that may enable shy children to fully express their communicative competencies across a variety of contexts, and propose directions for future research.

## 2. Conceptions of shyness

Going back to the 1970s, Thomas and Chess [1] described the 'slow-to-warm-up' temperament type as one of three temperament constellations in children, primarily characterised by a timid approach to or withdrawal from the unknown which is true for approximately 15% of the total population. The shyness of inhibited children is not evident in many familiar situations (e.g. playing with caregivers or known children), but usually occurs in novel situations or with unfamiliar people, which, depending on the context, may involve a degree of uncertainty for the children. However, a shy temperament goes beyond what is perceived by others at the behavioural level as a slow and inhibited approach, withdrawal or avoidance of such situations because, at the level of subjective emotional experience, those affected feel discomfort in unfamiliar (in particular social) circumstances. Usually, timid children are interested in social contact but, to some degree, afraid to initiate it, which costs them a lot of effort, so their behaviour should not be confused with social disinterest [2]. Shy people also

often have concerns or even fears about being judged, especially when they are the centre of attention [3]. Somatically, this can sometimes manifest as trembling, sweating or blushing.

These physiological observations also underpin a theory that suggests that shy people exhibit a dysregulated fear system, which causes hyperarousal in social situations [4, 5]. By using (neuro)physiological methods, such as cortisol levels in a saliva sample [6] or measuring heart rate or brain waves [7], researchers found that these dependent variables are elevated in shy children after and during novel or social situations compared to less shy children [8–10], which provides information about whether a particular situation is perceived as stressful by the subject, without this possibly being perceptible at the behavioural level. The theory of behaviour inhibition to the unfamiliar [11–13] emphasises children's initially inhibited behaviour towards unfamiliar people, but also towards novel objects and situations, and identifies developmental stability from 21 months to 7;6 years. But this loses weight as children get older and become schoolchildren. In this context, it's unlikely that the shyness reactions of pupils who, after a period of acclimatisation, are very familiar with the school system (familiar with their teachers, their classmates, typical procedures, etc.) are due to inhibition towards the unfamiliar. Instead, concerns and anxieties about social evaluation, especially in a negative way, for example, after giving wrong answers in the classroom, may be the more likely underlying motive for this age group, culminating during adolescence [14–16]. For many shy children, these concerns are mixed with a reluctance to take risks [17], especially in social situations, but also in new and uncertain contexts, so that they tend to hold back and avoid speaking in front of the class.

### 2.1 Measurements of shyness

Although caregivers and educators often have a good sense of whether a child tends to be shy or not, vague observations can be quantified using two common methods. Interestingly, the way in which shyness is assessed is strongly linked to the underlying theoretical-conceptual construct. If shyness is regarded as a trait, then it is a permanent and innate temperamental characteristic that is relatively stable in many different (social) situations from early infancy through toddlerhood to school age and early adolescence [4]. Trait shyness is classically assessed using questionnaire items that are often part of a more comprehensive temperament questionnaire, such as the German Inventar zur integrativen Erfassung des Kind-Temperaments (IKT) für 2-bis 8-Jährige [18]. In questionnaires used to identify a shy temperament, caregivers are asked about their child's verbal and nonverbal behaviour in situations that typically trigger shyness. Although these questionnaires provide valid and reliable information about whether a child is shy, moderately shy or not shy at all, the behavioural definitions often remain vague at the individual item level. For example, in the Early Childhood Behaviour Questionnaire (ECBQ), caregivers are asked to rate on a Likert scale how often a particular behaviour has occurred in the last 2 weeks, such as whether the child feels uncomfortable, turns away, or is quiet when meeting new people [19]. Using the last term "quiet" to briefly describe the verbal communicative behaviour of shy children, any close caregiver would probably be able to answer this accurately if it suited their child in certain situations. However, it leaves open the question of how a child is quiet, that is, the following interpretations could apply, for example: Does she speak silently, does she speak at all, does she use only a few words instead of whole sentences, or does she refrain from initiating to talk or even answering a question? Similarly, when describing nonverbal communicative behaviour, for

example, when looking at the item "aversion", does it apply to the whole body, the head or just the gaze?

In contrast, in behavioural observations and experiments explicitly designed to observe and operationalise nonverbal behaviour of shy and anxious children, a more fine-grained picture is drawn. These experiments are usually based on the assumption that shyness as a state, on the other hand, only manifests itself as a subjective (negative) feeling in specific unfamiliar situations through typical inhibited behaviour and is therefore not an integrative and stable part of temperament (so-called state shyness). An example of this is the study by Colonnesi and colleagues [20], in which 4-year-olds were asked to sing a song in front of a small group of unfamiliar people in a new environment, and their inhibited behaviour was recorded specifically in this situation. In these observational contexts, two types of shyness could be distinguished, which differ mainly in facial expression and are predominantly perceived positively or negatively by a communication partner. On the one hand, the avoidant-ambivalent type of shyness is characterised by social avoidance and is interpreted as a non-adaptive form of behavioural regulation, expressed by involuntary reactions such as frowning combined with head and gaze aversion [20]. On the other hand, the approach-ambivalent form of shyness is defined by smiling accompanied by gaze and head aversion and is perceived more positively by interlocutors. Using this method of observation, it is possible to quantify the frequency and extent of inhibited behaviours in shy children and compare this with, for example, less shy children. Behavioural observations therefore usefully complement questionnaires for assessing shyness in young children in a more nuanced and quantified way and demonstrate that shyness is not a homogeneous construct [21].

However, staged behavioural observations are generally unsuitable for identifying shyness as they are in many ways too complex to be used in educational settings. Nevertheless, assessment situations that are typical of both nursery and school settings, as well as research contexts, contain many of the components that trigger shy behaviour in children, which practitioners should be aware of, but which can also be used for sensitive observation of shy behaviour. From our perspective, assessment covers all pedagogical situations in which, for example, linguistic or cognitive knowledge is (systematically) tested using standardised diagnosis instruments or other methods that measure learning and learning growth on a criterion-based scale [22]. Most assessment situations have in common that the child's (linguistic) behaviour is being evaluated in a broad sense, although this is not always done explicitly, for example, in standardised language tests or in most language learning studies in university labs, where there is no open feedback as to whether the child's answer was correct or incorrect. Nevertheless, the entire situation involves a (social) evaluation of their behaviour, to which particularly shy children become receptive as they get older [14, 16], for example, because an educator is taking notes of it or because cameras are present. Increased behavioural inhibition can also be expected in shy children due to unfamiliarity and novelty [11, 12]. This is present on many levels in assessment situations: the task formats, the visual stimuli (e.g. unfamiliar objects), or the verbal stimuli (e.g. pseudowords) itself are often new and unfamiliar [23, 24]. In addition, an assessment may be conducted by people who have never met the children, or in an environment or with robotic agents that are unfamiliar to the children. The fact that so many components of the assessments are unfamiliar means that the whole process, in terms of what will follow, what will be expected of the child, and how long the whole situation will continue, ultimately involves a degree of uncertainty and unpredictability in which the tendency of shy children to be risk-averse

may unfold [17]. In conclusion, for many children, especially those who are inhibited and shy, an assessment situation as a whole is in most cases a situation of novelty, evaluation, and even uncertainty.

## 3. Verbal behaviour of shy children

In the first part of this chapter, we present a comprehensive overview of linguistic abilities in classical testing procedures. Particular emphasis is placed on analysing exactly what the test is measuring, that is, which linguistic abilities of reticent children are actually visible, as previous work has often hastily made a rough division between reception and expression without differentiating more precisely whether, for example, phonological awareness or expressive morpho-syntactic skills are involved. In addition, the reader is given a detailed description of how a test was actually administered (e.g. in school, with familiar people, and in groups). Furthermore, the subchapter takes a close look at how shyness was measured (e.g. by asking parents or teachers) and what comparison groups were used (e.g. the extreme poles of very shy vs. not inhibited at all). Finally, the section closes with an insight into cognitive learning processes.

### 3.1 Linguistic performance in language tests

One of the earliest insights into how timid infants use and respond to language came from a large-scale longitudinal study of same-sex twins that examined the early relation between behavioural inhibition and receptive and expressive language skills [25]. The latter were measured using the Sequenced Inventory of Communication Development (SICD; [26]), over a period of 1 year at three time points (14, 20, and 24 months), in which an experimenter asked the infants to imitate words, respond to short questions, and follow instructions with increasing difficulty. Behavioural inhibition was assessed by combining maternal and paternal reports from three different subscales of temperament inventories with behavioural observations at home and during laboratory visits. Latent growth models were used to analyse individual change and variation over time. A key finding of the study was that greater temperamental inhibition was more strongly associated with low expressive language skills than with low receptive language skills. The results of the study most support the "I know it but won't say it" hypothesis originally postulated by Coplan and Evans [27], which holds that young children with inhibited and non-inhibited temperaments are well comparable in terms of vocabulary size, but differ in their reticence to respond, which is most pronounced in language production, particularly in expressive language tests. In other words, shy children usually have the same language competence but are poorer at demonstrating and performing it in interaction with others, especially with novel interlocutors and in unfamiliar situations. Given that the children were being tested on a language battery, these results are not surprising, as receptive tasks often do not require children to respond verbally at all but rather to perform actions or point to something, which may represent a lower inhibition threshold for shy children than saying something. However, a more exact picture of the relation between shyness and language skills could be obtained by including parental questionnaires on language, as this would provide a more complete profile of infants' language skills outside of a test situation.

A very detailed picture of shy children's language skills, which extends the above findings, is drawn in the study by Crozier and Perkins [28], who researched various

linguistic abilities (vocabulary and morpho-syntax) using standardised tests and semi-spontaneous language measures in two different age groups, namely preschoolers (5 to 6 years old) and primary school children (8 to 9 years old). First, the children were assigned to either a dichotomous extremely shy or not shy group based on their teacher's judgement who had been briefed on the definition of shyness. Second, an unfamiliar researcher tested their receptive vocabulary with the short version of the British Picture Vocabulary Scale (BPVS; [29]), which includes different word classes such as nouns, verbs, and adjectives and in which children are asked to match a word to one of four pictures by pointing to it, characterised by different lexical proximity (so-called distractors) to the target item. Third, the children were presented with two short picture stories in order to elicit a narrative which they recounted to the researcher and which was tape-recorded. Various linguistic measures were then analysed, such as the total number of words uttered, an indicator of talkativeness in an assessment situation. The mean length of utterances (MLU) was also determined, which is an indicator of the complexity of the syntactic structure of an utterance, that is, how advanced a child is in his or her grammatical development. Finally, the language sample was used to identify how many different word roots used by the children in order to obtain an index of lexical diversity. Both groups differed significantly on all measures, that is, extremely shy children achieved lower mean scores than non-shy children, regardless of their age group. On the receptive level, the differences reached statistical significance, but on the expressive level, the differences were even very highly significant so that very shy children produced less varied lexical units and less complex syntactic constructions in their structured narratives, even when the influence of receptive vocabulary was held constant. These findings reflect those of Smith Watts and colleagues [25] for an older group of subjects but go further by considering the productive linguistic abilities of very shy children at multiple linguistic levels. One of the key findings is that extremely timid children are linguistically inhibited in semi-spontaneous narratives in an assessment situation, which also supports the "I know it but won't say it" hypothesis to some extent. However, due to the selection of the sample, which only allows a comparison of the extreme temperamental characteristics, it must also be taken into account that very uninhibited children may have a significantly above-average performance [27], as they have no aversion to novelty and risk, and thus do not represent the appropriate comparison group. It would therefore be interesting to observe the performance of middle-shy and moderately non-shy children and to use a familiar person to run the tests.

Although the study by Spere and colleagues [30] again only compares the extreme temperament poles, this study helps to provide a picture of the receptive language skills (measured by the Peabody Picture Vocabulary Test—Revised; [31]) and phonological awareness (measured by the Test of Auditory Analysis Skills—TAAS; [32]) of four-year-old very shy children. Their level of shyness was assessed by their parents using selected questions from the Colorado Childhood Temperament Inventory (CCTI; [33]). An important finding is that very shy children performed normally on both tests of their language skills, that is, they were not constrained on the critical phonological awareness test, which involves a novel task that requires children to omit parts of words or phonemes from words of varying complexity, that is, to manipulate and produce the heard words in such a way that a pseudoword is generated. This task challenges children to disengage from semantics and concentrate solely on the formal-abstract aspect of language without the aid of pictures, which is still difficult for kindergarten children as this ability is just beginning to emerge [34]. However, in the shy group, more children withheld an answer, especially when they did not know

the correct answer, the authors suggest. Children who were not shy at all scored above average, which again supports the hypothesis that being very open and outgoing is an advantage in verbal assessment tasks [27].

One of the few studies addressing the productive lexicon of shy preschool children in a testing situation is Coplan and Armer's study [35]. The Expressive One-Word Picture Vocabulary Test: Revised [36] requires the children to name drawn pictures with one word (e.g. nouns, verbs, and adjectives), with the concepts becoming increasingly difficult as the test progresses. Significantly, the test was administered by someone the children knew from a previous interview 1 week earlier and in a familiar setting, namely the classroom, in the presence of their classmates and their teacher. It is therefore likely that the lack of association between productive vocabulary and levels of shyness, as assessed by parents using the Child Social Preference Scale (CSPS; [37]), was due to the fact that the overall setting was not novel and less test-like, which may also have reduced children's social evaluative concerns and stress, allowing them to overcome their reticence in responding. The study by Zhu and colleagues [38] fits in with these non-existent relations, which also found no correlation between the shyness of kindergarten and preschool children from China and their receptive vocabulary. The latter was assessed using the Chinese version of the Peabody Pictures Vocabulary Test (PPVT-III; [39]) by a research assistant in a quiet corner of the classroom, similar to [35]. This shows that data on language behaviour of shy children in test situations, which have been obtained predominantly in Western cultures, can also be replicated in Asian culture. The study by Tolksdorf, Viertel, and Rohlfing [24] also found no correlation in preschool children between shyness and productive vocabulary, as measured by the German Aktiver Wortschatztest für 3-5-jährige Kinder – Revision (AWST-R; [40]), in which children are asked to name individual pictures with nouns and verbs. This was also the case for the results of the comprehension test (subtest of the German test Sprachentwicklungstest für 3-5-jährige Kinder – SETK 3-5; [41]), where children were supposed to act out a sentence they had heard with objects. However, these results must be interpreted in light of the fact that the children were already familiar with all the contextual factors (such as the experimenter, the laboratory room, etc.) from the previous three sessions, with the exception of the language tests themselves.

Another piece of the puzzle regarding the importance of the contextual testing environment is added by the study by Spere and colleagues [42], in which surprisingly all preschool children, regardless of their level of shyness, scored higher on a test of expressive vocabulary skills in a preschool setting compared to a highly familiar home setting. In the preschool setting, the language tests were administered by an unfamiliar experimenter in a quiet place and at home by a parent with an experimenter present but not involved. To assess shyness, parents answered several questions from the Colorado Childhood Temperament Inventory [33], after which the children were categorised into three shyness levels, with the two extreme groups (shy and not shy) resulting from at least one standard deviation above or below the group mean (middle shy). The language tests reported here include the Comprehensive Receptive and Expressive Vocabulary Test (CREVT-2; [43]), which requires children to name pictures, describe situations and provide definitions in the expressive domain, but also indirectly tests other linguistic levels such as grammar, that is, the CREVT-2 is not a pure measure of productive vocabulary. The Sentence Imitation – Test of Language Development – Primary – Third Edition (TOLDP-III; [44]) was also included, which captures knowledge of the correct word order in a sentence and grammatical markers, but also places high demands on phonological working memory. Another key finding

was that shy children did not differ significantly from the other temperament groups on any of the language measures, regardless of the context in which they were tested. The strong influence of the testing context for all children may be explained by the fact that even young children are more accustomed to such testing formats in their preschool environment than at home, where formal tests and the different role of the caregiver as experimenter are much more unusual and possibly more irritating for the children, which ultimately also applies to the shy cohort.

The study by Crozier and Hostettler [15] essentially sought to answer the question of whether the general test environment, together with peers, is more conducive to the performance of shy children on cognitive tests than individual tests. In this study, a large and broadly selected sample of 9- to 10-year-old primary school children were tested, who were consequently significantly older than the children in the previously reported studies. The children were divided into different groups so that their productive vocabulary and arithmetic skills were assessed by a researcher in either a group or individual setting in the written modality, with an additional oral condition in the individual setting. The two most shy girls and boys in each class were selected by the class teachers, who also randomly selected two comparison children from the same class to participate in the study. This represents a methodological improvement as it meant that the most extreme poles were not compared with each other. Levels of shyness were assessed by the Teacher Ratings Form of the EAS Temperament Survey [45, 33]. Productive vocabulary was measured using the Crichton Vocabulary Scale 1988 Revision (CVS-R; [46]), which requires children to define words of increasing difficulty. The children's mathematical skills were tested using a specially constructed test based on formats from a standard intelligence test and the content of current classroom material. The results of the study show that in the written group test of their productive vocabulary and arithmetic skills, the shy children performed about as well as the less shy children, albeit at a slightly lower level. In the individual tests, the results were different, with the shy children scoring significantly lower than the less shy children, especially for productive vocabulary in the written language modality.

These pronounced differences in the productive lexicon must be seen in the context that the CVS-R actually requires children to draw on other language skills such as grammar, pragmatics or receptive vocabulary in order to formulate a correct response which places more demands on children's language processing than the arithmetic test. The way children formulate their definitions also reveals much more about their thought processes. In this sense, it may be that shy children experience the CVS-R as more socially evaluative, which apparently cannot be mitigated by staggering the timing of correction, as is the case with written test formats. Interestingly, in a more anonymous group setting, a less socially evaluative atmosphere seems to be at work, as shy children are noticeably less the focus of the tester and corrector than in a face-to-face test. The "lack of practice" hypothesis [27], which suggests that avoidance of social situations reduces the exposure and opportunity to practise language with others and results in a lower proportion of speaking in experimental or assessment situations [28], could be particularly true for such verbal definition tasks.

Lastly, Coplan and Weeks' study [47] offers interesting insights into the productive pragmatic performance of shy pupils at the beginning and end of the first school year, as assessed by the so-called 'pragmatic judgement' test of the Comprehensive Assessment of Spoken Language (CASL; [48]). The children were read some short everyday situations as vignettes and were asked to complete them according to the communicative intentions, wishes and emotions of the protagonists in the stories. This test was administered by previously unknown research assistants. The students'

mothers assessed their level of shyness using the shyness subscale of the Child Social Preference Scale (CSPS; [37]). At the beginning of the school year, shyness was negatively associated with pragmatic language skills, whereas at the end of the year the negative correlation was modest. This may well be related to the fact that by the end of the school year many of the contextual factors at school are familiar to the children, but also to the fact that the test itself is already known, which means that even shy children may be more confident in giving an answer. Interestingly, however, the authors emphasise that the tests were unable to diagnose a deficit in pragmatic skills in shy children, which is consistent with previously reported test results at other linguistic levels. The authors explain that pragmatic skills in particular are a protective factor, especially in shy children who are characterised by a socially anxious component, that is, advanced receptive and productive pragmatic skills (e.g. also, humour and irony) make it easier for shy children to engage adequately in social interaction and to respond appropriately than when these skills are poorly developed. The fact that advanced pragmatic abilities predicted a reduced level of shyness at the end of the school year, particularly for boys, lends support to this protective role.

### 3.2 Cognitive performance in word-learning experiments

In addition to these extensive findings from language tests with shy children, there is already evidence that temperament can influence basic word-learning processes at an earlier developmental age. In typical word-learning experiments, children are presented with novel or very rare objects (e.g. a tea strainer) in real life or on pictures, which are repeatedly named by an experimenter using so-called pseudowords (e.g. koba) in order to form a label-object association, that is, to learn a new word. After a few minutes, either receptive learning can be tested by asking the child to choose the target object for the label heard before from among other possible referents. Alternatively, productive learning can be assessed by asking the child what the target object is called. In a word-learning study with two-year-olds, in which shyness was measured using a parent questionnaire [19], less shy toddlers outperformed shy toddlers in the word-learning process itself, being better at establishing a new word-object association by mapping a novel word to a novel object among familiar objects. Subsequently, shy toddlers were less able to receptively retain the novel label [23]. Critically, in the same learning scenario, shy toddlers preferred to pick up a familiar object over a novel object when they heard a novel word, even though the familiar objects could be ruled out by mutual exclusivity. The authors conclude that novelty avoidance, paired with risk avoidance, could hinder the word-learning process in that novel words are falsely mapped with familiar objects. Although one might be tempted to interpret these results that shy toddlers tend to avoid new objects and labels in the learning situation, but changing the overall setting or even the experimenter to be more familiar might have a different effect on the results as demonstrated in the following studies. Hilton and Elsner [49] modified the learning situation with two-year-olds by presenting objects and words in two different conditions by a familiar or unfamiliar experimenter on a screen. Analysing eye movements, the authors found that when learning words with the familiar experimenter, shy children's attention tended to focus on the new object, making a word-object mapping more likely than when learning with the unfamiliar experimenter. A more recent study even went so far as to establish familiarity by having the childrens' caregivers take on the role of experimenters [50]. Interestingly, this reversed the findings of Hilton and Westermann [23], that

is, the shy 2-year-olds associated the pseudoword with the novel object just as well and were even able to retain it significantly better than their less shy peers in the subsequent retention phase. Overall, this shows the important role of caregivers in early learning scenarios, especially for inhibited children, to allow them to focus on the cognitive demands of the task and express their language skills. It shows that the results of many experiments involving infants may be more affected by trait effects and that small methodological changes can have a large effect. In section 4, we will look in more detail at the findings on attentional patterns during word learning.

Also, the assumption that shy children are less likely to take risks by making mistakes in the retention situation may be mitigated if the whole setting is familiar. Indeed, in a word learning study in which familiarity was established through a repeated measures design, we investigated how familiarity with a learning and test situation affected word learning in shy preschool children interacting with a robotic partner [24]. The word learning was embedded in a short narrative by the robot in which the children encountered six novel words (colour adjectives), whose referents on pictures the children helped to uncover in a joint activity with the robot. This word-learning activity was repeated twice, with a break of a few days in between, so that the whole procedure was familiar and predictable to the subjects. However, unlike Hilton and Westermann [23], the focus of this study was not on the mapping process itself, that is, not on observing which object the children matched to the word, but on learning success, in particular, whether the children were able to generalise the novel adjectives to other objects in a subsequent test situation. The first test situation took place a few minutes after the last learning situation and was repeated a few days later, so that the subjects were again familiar with the situation on the second occasion. Here, the test content was presented in a context similar to a shared book reading that all children are involved in on a daily basis. When tested for word learning for the first time, shy children scored lower than less shy children; but once the whole test situation was known, the shy children caught up in the second test. Interestingly, the level of shyness positively predicted gains in word learning, that is, the shyer a subject was, the greater the gain in word learning on the second test.

Taken together, these results show the importance of familiarity and routinised formats in learning arrangements, which may allow shy children to feel more confident about expressing themselves verbally in a test situation, as they dare to say a word regardless of their uncertainty about the correctness of their response. Also, the avoidance of novelty at the level of words or items, or even towards the novel robotic partner, seems to fade into the background under the familiarity of the whole situation. In this respect, it is worth noting that the robot could have been perceived more as a coequal learning partner compared to an adult experimenter, which could have reduced the social load and the feeling of being evaluated in the situation itself [24].

## 4. Nonverbal behaviour of shy children

In addition to the work demonstrating how shyness can be reflected in children's verbal behaviour towards an interaction partner, there are several, albeit fewer, studies that investigated the influences of children's shyness on different nonverbal modalities across different interactional contexts, typically investigated by observing children's behaviour during social exposure or in unfamiliar socially evaluative settings.

Much of the literature on shyness has focused on children's gaze behaviour and their facial expressions as important nonverbal indicators of shyness [51–55]. One of the key studies that systematically examined these nonverbal indicators, particularly in terms of children's gaze behaviour and affective facial expressions, while also exploring their role as strategies for social and emotional regulation, was conducted by Colonessi and colleagues [56]. In their study, 3-year-old children were asked to imitate animal sounds in front of an unfamiliar person and then observe their own performance. The authors specifically analysed their behaviours in terms of positive and negative expressions of shyness. The nonverbal cues studied included gaze aversion, head movements, and facial expressions (e.g. smiling). In line with previous literature [57], positive shyness was characterised by behaviours like smiling while averting gaze. In contrast, negative shyness was marked by avoidance behaviours such as gaze aversion without smiling or expressions of discomfort like frowning. The study found significant differences in nonverbal behaviours between shy and less shy children. Shy children exhibited more frequent gaze or head aversion during interactions where they were the focus of attention during the interactions with the unfamiliar interaction partner, while less shy children were more likely to maintain eye contact and engage in positive expressive behaviours. Crucially, Colonnesi and colleagues [56] highlighted that such positive expressions of shyness can function as an adaptive social strategy, helping shy children navigate socially demanding or stressful situations. On the other hand, negative shyness was more closely associated with social withdrawal and anxiety. In a more recent study addressing children's gaze and expressions of positive and negative affect, Hassan and Schmidt [58] examined how dyads of preschoolers responded to the task of giving an impromptu speech about their most recent birthday in front of an experimenter. After one child in the dyad delivered their speech, the other child took their turn. The children were unfamiliar with each other and were matched by age and gender. Heightening the social-evaluative setting, the authors not only required the child to give the speech in front of the unfamiliar experimenter and peer but also informed the child shortly before the task that the speech would be recorded to show to other children later. In their results, the authors found that shyness was positively associated with nonverbal avoidance behaviours, such as gaze aversion. In particular, when confronted with the communicative task of giving a speech, shy children were more likely to avert their gaze and show less positive affect while speaking. Moreover, the authors found that children who observed their shy peers deliver a speech exhibited less positive affect and more avoidance when it was their turn to speak, suggesting that shy children's nonverbal behaviours can influence the subsequent nonverbal responses of their peers. Based on their findings, the authors speculated that shy children who spoke first might signal to the observing child that the task was intimidating, leading the other child to exhibit less enthusiasm and more restricted positive affect during their own speech.

While these studies identify nonverbal behaviours such as gaze aversion and facial expressions as strong indicators of shyness, it is important to highlight that in recent years, a body of work has demonstrated that these behavioural patterns function as important protective mechanisms for shy children in socially stressful situations, such as public speaking or interactions with unfamiliar people [55, 59, 60]. Interestingly, this line of research has recently expanded to examine children's interactions with socially interactive agents, such as social robots, and how shy children's interactions evolve over longer time scales. Tolksdorf, Viertel, and Rohlfing [24] observed the behaviour of preschool children, focusing on temperamental shyness and tracking their expressions of pleasure (e.g. smiling) and discomfort (e.g. frowning) across

four consecutive sessions involving multiple novel word learning and testing tasks. While the results showed that shyer children consistently exhibited fewer positive reactions over time, an intriguing finding emerged regarding their expressions of discomfort. When given the opportunity to familiarise themselves with the learning or testing context (e.g. the first learning or testing situation), shy children showed significantly lower levels of discomfort compared to their less shy peers. The authors proposed that this faster reduction in negative reactions might suggest a familiarisation effect, particularly pronounced in shy children, as they became more accustomed to the demands of the specific situation. These findings highlight that, depending on the context, shy children may adapt differently to task demands, demonstrating a nuanced capacity for adjustment.

Considering another nonverbal modality, Colonnesi and colleagues [61] explored the relationship between shyness and infants' use of gestures at 12 and 15 months of age. The study measured infants' positive and negative shyness when they first entered the laboratory rooms, carried by a parent, and were welcomed by the experimenter—a person unfamiliar to them. Following this, the researchers examined the infants' gestures during a task in which the child sat at a table facing an experimenter, with the parent nearby. A second experimenter, positioned behind a curtain, presented various stimuli: pleasant (e.g. a spinning spiral), unpleasant (e.g. a toy spider), and neutral (e.g. potholders). The study revealed a developmental shift in how infants' shyness and pointing behaviours are linked between 12 and 15 months. At 12 months, positive shyness (smiling while averting gaze) was negatively associated with pointing gestures, suggesting that shyer infants were less likely to use pointing during interactions. However, by 15 months, this relationship reversed, with positive shyness becoming positively associated with pointing, particularly in infants who also displayed negative shyness. Additionally, infants who exhibited more negative shyness pointed more frequently at unpleasant stimuli. These findings suggest that shyness plays a role in shaping early nonverbal communicative behaviours, such as gestures, particularly in directing attention to emotionally charged stimuli. Colonnesi and colleagues [61] concluded from their findings that as infants might become more aware of themselves and others during social interactions, they may also develop a better understanding of their role in these interactions and become more adept at regulating their emotional responses, even in unfamiliar or ambiguous situations. This increased awareness may allow them to engage in more coordinated social behaviours, such as using pointing gestures to share attention or direct the focus of others. This investigation of children's multimodal communicative behaviour, specifically their use of gestures when interacting with different social partners, represents an innovative approach (see also [62]). In fact, current research emphasises the need for deeper exploration of the nuances in children's gestural behaviour related to shyness, while also highlighting the critical role cultural differences play in shaping these behaviours [63]. Further research in this area could provide valuable insights into how shyness influences the development of different multimodal patterns of behaviour, including gestures, in different cultural contexts, thus providing a more comprehensive understanding of how shyness shapes early social-communicative development.

The results across the studies discussed above consistently suggest that shyness can critically influence an individual's nonverbal behaviour, leading to the emergence of distinct patterns in unfamiliar social situations, however, much of the research to date has focused on the behaviour of shy children as it unfolds over the entirety of an interaction. As a result, these behaviours are often methodologically studied in isolation from their interaction partners. Consequently, less is known about how

shy children's behaviour evolves dynamically in relation to their partners' actions in unfolding interpersonal contexts, overlooking the fluid and adaptive nature of communication, which involves continuous adjustments based on the signals and behaviours of others. Addressing this gap, Tolksdorf and colleagues [64] investigated how shyness influences children's proxemics—specifically, the coordination of physical and social space between children and their interaction partners. The study measured shy children's proxemic behaviour during similarly designed interactions, but groups of children encountered different social partners with either an unfamiliar social robot or an unfamiliar human partner. Observed nonverbal behaviours included the physical distance the child maintained and the time spent in different proxemic zones (e.g. close or distant) relative to the interaction partner. The researchers found that shy children consistently maintained greater physical distance during the unfolding interaction, regardless of whether their partner was human or robotic. The shyer the child, the less time they spent in close proximity to their partner. These findings suggest that shy children exhibit similarly restrained proxemic behaviour, even though their partners—whether human or robot—may impose different levels of social demands. In this respect, despite the potentially different social complexities, shy children's approach distance persisted in both conditions, suggesting that their behaviour may not be driven solely by the specific partner's social behaviour, but may reflect a more general reluctance when interacting with unknown partners. This points to the intriguing question of which (social) contextual cues may have influenced children's proxemic behaviour and which other factors, such as the novelty of the interaction or internal feelings of self-consciousness, may have played a role. The authors originally expected that shy children would keep a greater distance from the robotic partner due to the inherent novelty of interacting with such a socially interactive agent for the first time. However, previous research suggests that children may perceive social robots as less judgemental [65–67], and the robot's toy-like appearance, and predictable behaviour may have mitigated the expected distancing effect. Consequently, shy children's preference for greater social distance with the robot may have been less pronounced than anticipated, leading shy children to exhibit similar proxemic behaviours towards both the robot and human partners, suggesting a more general pattern of distance-keeping in unfamiliar social situations.

While these findings highlight how shyness influences children's physical distancing behaviour, they may also point to a larger theme: the context sensitivity of shy children's behaviour and how it may shift depending on the specific parameters of social interaction. A related study explored this line of thought by looking at patterns of visual attention in word-learning situations. Inspired by Hilton, Twomey, and Westermann [68], who found that shy children showed different patterns of visual attention during word learning compared to their less shy peers, Tolksdorf, Viertel, and Rohlfing [69] analysed visual attention in the context of a naturalistic learning situation, again using a humanoid robot in their methodological approach. A key difference in this study was the focus on familiarity, which was operationalised through repeated social learning situations. Contrary to Hilton et al. [68], the authors did not find a lower level of visual attention to target items that were labelled in very shy children. Instead, a strong relationship was observed between the proportion of gaze directed to the target referent and successful word learning, regardless of the child's shyness. These findings suggest that establishing routines and familiarity in learning environments can help shy children to feel more comfortable expressing themselves, and may act as a buffer to enable shy children to unfold their attentional processes in ways that support learning experiences. In a related study, Tykhonenko and colleagues [70] examined how shy and

less shy children adapt to changing task demands through turn-timing behaviour in interactions with a social robot. The study revealed that although shy children consistently showed longer response latencies compared to their less shy peers, this difference was particularly pronounced when they were introduced to novel tasks. While both groups exhibited faster turn-taking in familiar tasks, shy children's timing slowed significantly in response to novel task characteristics, indicating heightened sensitivity to situational changes. These findings suggest that while shy children may take more time to adapt to novel demands, their delayed responses might reflect a more careful approach, potentially facilitating richer situational processing. These findings are consistent with the broader notion that although shy children show different temporal coordination in their interactive behaviour, this may be due to a more nuanced processing and awareness of situational changes, which is crucial for understanding their adaptive behaviour in dynamic learning environments.

In summary, the available evidence highlights the significant role shyness plays in shaping children's nonverbal behaviours, which are highly context-sensitive and influenced by factors such as novelty and perceived social demands. However, much of the current work relies on static, laboratory-based stimuli, limiting our understanding of how shy children behave in dynamic, naturalistic contexts. In addition, there have been very few longitudinal studies that have examined the developmental stability of shy children's multimodal behaviours and the long-term effects of familiarity with different partners or tasks. Despite these gaps, current research offers a foundation for developing more inclusive educational activities and assessment formats tailored to shy individuals. The next section will explore the practical implications of these findings for designing testing environments that better accommodate the unique needs of shy children.

## 5. Implications for designing testing situations for shy children

Designing testing environments that meet the specific needs of shy children is essential to accurately assess their abilities and encourage meaningful participation. As discussed in previous chapters, shy children often face heightened challenges in social-evaluative situations, which can affect their interactive behaviour and engagement with their social partners. Making educational activities and assessment formats more flexible to accommodate shy children's behavioural patterns is crucial to gaining a more accurate understanding of their competencies. In doing so, we can promote an environment that supports their unique communication needs and an inclusive environment for all children with a range of temperamental characteristics. To create an environment that allows shy children to express themselves comfortably, several key implications arise.

First, as shy children often hesitate to provide verbal responses [30], a simple yet effective solution is to allow more time for them to respond. This, however, requires the interlocutor to tolerate longer pauses in the conversation. While modifying standardised tests may be challenging due to quality criteria, in many other contexts—such as informal assessments, classroom discussions, or laboratory experiments—providing shy children with additional time to formulate their responses could be crucial not only for assessing their competence but also for enabling them to participate at their own pace. Research shows that highly shy preschoolers initiated responses significantly slower than their medium and less shy peers in expressive language tests requiring verbal answers but not in comprehension tests involving

nonverbal responses [71]. This highlights the importance of extended wait time, particularly in verbal question-and-answer formats. Increasing wait time not only benefits shy children, but also their less shy counterparts, as it allows children more time to process the question and develop thoughtful responses. In fact, extending wait time beyond three seconds has been shown to improve both the quality and quantity of student responses, fostering the use of higher-level cognitive processes. Additionally, it enhances students' confidence and promotes deeper engagement in conversations and classroom activities [72, 73].

However, in particular unfamiliar or socially stressful situations, for very shy children, it can be quite relieving to be given the opportunity to participate with a very short verbal or even nonverbal response, such as a gesture, rather than requiring a longer verbal response. The importance of considering different nonverbal means of communication, especially in shy children, is demonstrated by Viertel [74], who examined early social cognition in 19-month-olds in the context of a helping paradigm. Interestingly, the shy children outperformed their less shy peers in this experiment by using more diverse communicative means (e.g. showing or pointing) from a distance to inform the experimenter about a hidden object than those means by which they had to approach her (e.g. giving). The result would have been exactly the opposite, to the disadvantage of the shy children, if only proxemic gestures had been considered. These findings highlight the importance of paying close attention to subtle nonverbal means of communication, especially with young children, in tests or experiments designed to assess their cognitive or linguistic abilities. It also underlines that shy children prefer to act within their comfort proxemic zone and it is crucial to allow them the space and time to observe the ongoing social interaction before they become actively involved. Lastly, knowledge of the use of more subtle communicative signals and of typical (positive and negative) expressions of shyness is particularly helpful for practitioners to be aware of a shy child in key situations and, if necessary, to interpret test results accordingly.

Another important element is to encourage shy children to respond, that is, to prompt and motivate them to share their thoughts with their classmates, for example, or to say something in formal tests even if they are unsure whether their answer is correct or appropriate. One promising approach is the way in which questions are framed, for example the technique of less controlled questions, which is characterised by a more conversational style with fewer specific questions directed at the child, but with occasional reference to and elaboration of what the child has said [75]. This less controlled questioning technique used by teachers in their kindergarten classes during 'show and tell' were clearly more beneficial than a more controlled questioning technique in terms of eliciting longer speech, higher word counts, and voluntary communication of more content, especially with shy children. This technique seems to reduce the socially evaluative nature of an assessment situation and more closely resembles a casual personal conversation, which lowers the pressure on shy children and allows them to overcome their initial inhibitions more quickly [28].

Closely linked to this is support in the event of failure or mistakes, which may have been made publicly in the classroom in front of other pupils. This is a particularly precarious and uncomfortable situation for many shy children as it increases their concerns about social evaluation [76], which could raise the threshold for taking risks in front of others. It is important to convey the attitude that it is fine to make mistakes and that mistakes should be seen as part of the learning process and an approach to learning success for everyone [77]. In addition, inhibited children should be given the confidence and support to try again, rather than withdrawing and remaining silent because of possible failure.

Moreover, the presence of a familiar person, especially a primary caregiver, can be highly beneficial for shy children, particularly younger ones, during standardised tests or word-learning experiments. Research examining children's social referencing during formal language assessments found that the level of shyness significantly predicted how often children looked to their caregiver for reassurance [78]. Shy children, in particular, used their caregiver as an emotional resource to help them regulate their feelings in these uncertain situations [79]. This role of the caregiver is especially important considering that very shy children tended to use social referencing more frequently when they were unsure of an answer or had already provided a response [78]. The caregiver's presence, in these instances, indirectly contributed to the smooth continuation of the test. Additionally, recent studies suggest that shy children's reliance on social referencing may increase when faced with unfamiliar situations, such as language assessments or word-learning tasks. Tolksdorf, Crawshaw, and Rohlfing [80] found that children sought their caregiver's support more frequently when interacting with a robot, likely due to the robot's unfamiliar behaviour creating additional uncertainty. This finding aligns with the notion that very shy children, who may already feel unsure in these contexts, greatly benefit from the emotional support and reassurance provided by their caregivers, leading to smoother interactions and potentially improved test outcomes. Thus, caregivers not only help shy children regulate their emotions but also facilitate continuity and success in unfamiliar settings such as experimental testing or learning contexts.

Our previous analyses also demonstrate that different temperaments require different learning arrangements, especially for young children in word-learning settings. While extroverted and open children benefit from novelty, for shy children contextual factors need to be modified to maximise familiarity, for example, in terms of the predictability of the setting, the presence of the caregiver, or even the caregiver taking on the role of experimenter [23, 50]. This familiar framing allows them to concentrate on the cognitive demands of the task and to unfold and demonstrate their actual knowledge, rather than a constrained performance due to suboptimal contextual factors. As many studies of linguistic performance in language tests of shy children have shown, it is not necessary to tailor a whole package of familiar contextual factors, especially for preschool or school-age children. Instead, it is often sufficient to administer the test in a familiar environment or with a person they already know to encourage shy children to participate and to feel comfortable in producing language. Older, more literate children benefit from more anonymous group tests [15, 42], which are less socially evaluative and less focused on their individual performance. In addition, this type of test often provides them with more time to formulate their answers.

However, sometimes it is not possible to change contextual factors to create a more familiar situation, so practitioners should be aware that even if they receive a response from a shy child in the test situation, it may not necessarily represent the child's actual knowledge and a valid measure of it [23]. As a consequence, this means that children's language performance gained from formal language tests should not be overestimated or misinterpreted. If the test procedure allows, it could be repeated under the same or similar conditions after a period of time as a means to increase predictability and a possible attempt to capture actual knowledge.

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Chapter 3

# Statistical Analysis for Variate Relationships in the South African ECD System

*Lieschen Venter*

## Abstract

The comprehensive mapping of the South African early childhood development (ECD) system necessitates extensive statistical analysis to identify and quantify key factors within the country's unique context. This study employs statistical techniques to analyze data from the 2022 General Household Survey, focusing on children aged newborn to 6 years. Factor analysis, multilevel regression, and structural equation modeling were used to identify five person-level factors (*i.e.,* child health, ECD quality, family structure, welfare income, ECD attendance) and four household-level factors (*i.e.,* food insecurity, home assets, home utilities, housing quality). The final structural equation model demonstrates an excellent fit and explains substantial variance in key outcomes. The findings reveal strong associations between child health and ECD attendance with attendance positively influencing ECD quality. Family structure showed a significant positive association with home assets while welfare income emerged as a significant predictor of multiple outcomes. This nuanced understanding of the South African ECD system highlights the interconnected nature of individual and contextual factors, underscoring the need for holistic approaches to ECD that address both educational and socioeconomic aspects.

**Keywords:** factor analysis, multilevel regression analysis,
structural equation modeling, relational mapping, South African context

## 1. Introduction

Early childhood education (ECE) in South Africa (SA) encompasses programs and policies for children from birth to nine years, involving parents and caregivers to protect children's rights and ensure their cognitive, emotional, social, and physical development. The goal is to prepare children to enter the schooling system as well-rounded individuals, increasing their likelihood of academic success [1].

South African children are documented and monitored through unabridged birth certificates, ensuring their safety and legal recognition. However, vulnerable groups like undocumented foreign minors and children in impoverished areas often fall

outside this system. Data from the 2021 census indicates that SA had approximately 20.6 million children younger than eighteen years, about 34% of the total population, with 10% aged newborn to four years and another 10% aged five to nine years [2].

It is compulsory for South African children aged four and five years to be enrolled in Grades RR and R, respectively. These reception years are integral to the national curriculum under the Department of Basic Education (DBE), laying the groundwork for formal education from Grades 1 to 12. By age four years, children are expected to communicate intelligibly with strangers, perform basic hygiene tasks, and engage in cooperative play, crucial for socialization and preparation for primary school [2, 3].

Early childhood development (ECD) programs support cognitive development during the critical early years, providing a foundation for success in school and lifelong achievements. Quality ECD programs accessible to all socioeconomic backgrounds minimize early-stage inequalities. Direct ECD services include crèches, playschools, learning centers, clinics, and informal community-run playgroups. Indirect ECD services involve parent education and support through home visiting programs and community development initiatives.

South Africa is known for significant socioeconomic inequality, measured by income, education, and employment status. Historical and political factors, particularly the apartheid era (1948–1994), entrenched racial and economic disparities. Despite the end of apartheid, these disparities persist. The Gini coefficient, a measure of income inequality, often exceeds 0.60, placing SA among the most unequal countries globally [4]. Educational inequality, especially is stark [5]. Employment inequality exacerbates socioeconomic disparities. The unemployment rate is high, particularly among the youth and Black African population, with overall unemployment at 32.9% and youth unemployment at 63.9% [6]. Housing conditions reflect this divide, with many South Africans living in informal settlements lacking basic amenities [7]. Health disparities are similarly pronounced, with lower SES groups facing higher rates of chronic diseases and limited healthcare access.

ECD systems involve complex interactions among children, parents, educators, and policymakers. Understanding these relationships is essential to inform effective interventions and policy decisions. Statistical modeling provides a framework for uncovering these relationships and assessing the influence of different factors on child development outcomes [8–11].

## 2. Data preparation

The General Household Survey (GHS), conducted annually by Statistics South Africa (StatsSA), measures South African household living conditions, including education, health, social development, housing, services access, food security, and agricultural activity. Data collection has been electronic since 2019 using computer-assisted personal interviews. The survey targets urban, tribal, and agricultural communities at provincial and metro/non-metro levels, with an average annual response rate of 88.6% from approximately 20,000 households. The data is hosted on the DataFirst portal at the University of Cape Town [12].

The GHS uses StatsSA's master sample frame, which supports various household surveys. The 2022 survey employed the 2013 master sample, based on the 2011 census data, dividing the country into 103,576 enumeration areas (EAs) to form primary sampling units (PSUs). The current master sample includes 3324 PSUs and approximately 33,000 dwelling units, an 8% increase from the 2008 master sample,

enhancing estimate precision. The sample design is a stratified two-stage process with probability proportional to size (PPS) sampling of PSUs, followed by systematic sampling of dwelling units.

Due to the influence of the COVID-19 pandemic, the 2020 and 2021 datasets were excluded from this analysis as outliers. The 2022 dataset is considered the first to reflect approximately normalized conditions post-pandemic, making it the chosen dataset for this study.

In preparing the data for comprehensive analysis, an essential step is the careful merging of person-level and household-level data. This process is critical to enable multilevel analyses that incorporate both individual and household characteristics.

Person-level data included detailed information on demographics (*e.g.*, age, gender, ethnicity), educational attainment, health status, and economic activities (*e.g.*, employment status, income sources). Each record represented a unique individual, capturing their specific attributes and experiences within the household and broader community context.

Household-level data contained aggregated information relevant to the entire household, such as dwelling characteristics (*e.g.*, type of housing, ownership status, number of rooms), access to services and utilities (*e.g.*, water, electricity, sanitation), and household income. Each record represented a unique household, summarizing the collective characteristics and resources of its members.

The merger of these two datasets was facilitated by a unique household identifier, labeled as *uqnr*, present in both files. This identifier serves as the key for joining the person-level and household-level data to ensure accurate linkage between individual records and their corresponding household characteristics.

This merging process was fundamental to enable more complex and nuanced analyses. For example, analysts might examine how child-specific outcomes, such as ECD attendance or physical health, were influenced by household-level factors like income or access to basic services. Without merging the files, such multilevel analyses would be impossible, limiting the study to either person-level or household-level factors alone.

The merging process required several carefully executed steps to maintain data integrity and ensure accurate linkages between individuals and their households. Validation verified the accuracy of the merge and identified any mismatches or inconsistencies. Missing data were handled through appropriate imputation techniques or exclusion criteria, while outliers or anomalous values were excluded to avoid skewing analyses.

Aggregating multiple survey responses provided more representative data and minimized individual measurement errors. For this analysis, GHS survey responses were transformed into indicator variables using categorical variable aggregation.

One-hot encoding grouped survey responses into fewer categories based on theoretical and statistical considerations, like class imbalance. For example, the variable *fam_two_parents* stored respondents' marital status, with responses grouped into either "married or living with a partner," or "single, separated, divorced or not in a relationship." Each respondent's categorical answer was binary encoded as a value of 1 if they belonged to the first group, or 0 if they belonged to the second group.

Indicator variables were carefully defined for all relevant prompts in the GHS to balance responses and ensure semantic clarity. This process involved generating specific indicators for different sections of the survey.

For education at the person-level, indicators were generated for ECD fees, resources, transport, absenteeism, and program quality. In the health section at the

person-level, indicators were developed for chronic, acute, and infectious diseases, as well as disabilities and general health conditions.

At the household level, responses related to housing were encoded into indicators for building materials, water and electricity access, pollution, sanitation, communication, and transport. Welfare-related responses were transformed into indicators for food security, household wealth, and medical care, capturing essential dimensions of household well-being. Lastly, economic activities were encoded into indicators for income sources, welfare income, and expenditures, providing insights into the financial aspects of households.

## 3. Exploratory and confirmatory factor analysis

Factor analysis (FA) enhances data interpretability by identifying latent structures. Exploratory factor analysis (EFA) was used to develop measurement models, and confirmatory factor analysis (CFA) was used to validate these models. EFA, assuming latent factors underlie observed variables, reduces high-dimensional datasets into key factors. Applying the technique to the GHS uncovered latent constructs within the survey data.

A crucial step in EFA is determination of the number of factors to retain. Cattell's scree test [13] plots eigenvalues and can be used to identify significant factors. Eigenvalues measure the amount of variance in the observed variables that a factor explains so that factors with higher eigenvalues before the so-called "elbow point" in the scree plot are suggested to be meaningful. This suggested number of factors may be refined and supported by further analysis, ensuring factors accurately represent underlying constructs.

To aid interpretation, initial factor loadings undergo rotation, aiming for high loadings for a few variables and near zero for others [14]. Orthogonal rotation ensures that are factors remain uncorrelated, while oblique rotation allows for correlations. The varimax rotation criterion, popular in social sciences, maximizes variation in factor-variable relationships, making interpretation clearer. Factor loadings indicate the strength of relationships between factors and variables, with higher values showing stronger relationships. Verification against the data confirms these loadings capture hypothesized constructs.

EFA was conducted on 8,365 GHS records for children aged newborn to six years across all provinces in SA, identifying latent constructs without a preconceived structure. Indicators with zero variance were removed to avoid computational issues. Statistical tests for data suitability for factor analysis where the Kaiser-Meyer-Olkin (KMO) measure compared correlations and partial correlations to evaluate shared variance. The KMO measure, with values above 0.7 indicating suitability, was 0.88 for the GHS, confirming its adequacy for factor analysis.

Factor loadings, indicating the association strength between indicators and latent factors, were significant if above 0.408. This conservative threshold ensures meaningful relationships so that the rotated factor pattern shows a clear structure with strong loadings on single factors and minimal cross-loadings.

Based on these factor retention criteria, a five-factor solution was identified as most suitable, balancing statistical and theoretical considerations. To enhance interpretability, a varimax rotation was applied, simplifying the structure by making variables load strongly on one factor and weakly on others, assuming the factors are uncorrelated.

The five factors explained 83.28% of the total variance – a good proportion in social sciences research. The rotated factor loadings suggest thematic interpretations for each factor:

1. *Child health:* High loadings from indicators related to children's physical and cognitive health, including communication, mobility, hearing, memory, vision, and self-care.

2. *ECD quality:* Indicators of frequent engagement in developmental activities like counting, object naming, playing, coloring, reading, and singing.

3. *Family structure:* Indicators related to family composition and stability, including the presence of the biological father and married or long-term partnered guardians.

4. *Welfare income:* Indicators related to the receipt of social grants and child support welfare, capturing household reliance on government assistance.

5. *ECD attendance:* Indicators related to access to and participation in formal ECD programs, including attendance and the ability to pay fees.

Notable indicators, such as the gender of the household head, guardians' education levels, children's health insurance, chronic illness status, and guardians' income, were excluded from the analysis due to insignificance. This exclusion suggests these indicators did not significantly contribute to the factor structure or showed little variance in the records. The complex indicator *ecd_attend* was retained despite loading on two factors, as it is relevant to multiple constructs, providing a nuanced understanding of its influence. These person-level factors and the indicator variables from which they are comprised are listed in **Table 1**.

Confirmatory factor analysis (CFA) was used to validate the hypothesized factor structure. Fit indices were employed, including the $\chi^2$ test and the standardized root mean square residual (SRMR). SRMR values below 0.055 indicate a good fit. Incremental indices like the comparative fit index (CFI) compare the specified model to a baseline null model. CFI values above 0.94 indicate a good fit [15].

CFA was used to validate the five-factor person-level structure. Results showed a reasonable fit to the data. The $\chi^2$ statistic ( $\chi^2 = 8255.93$, df = 137, $p < 0.0001$ ) was significant, which is common in large samples. The RMSEA was 0.08, suggesting moderate fit. The SRMR at 0.05 indicated good fit, and the CFI at 0.96 was excellent. The CFA confirmed the factor structure identified in the EFA, with all standardized factor loadings statistically significant and high, ranging from 0.27 to 0.99. The model explained a substantial portion of variance in most variables, although some variables related to family structure and ECD fees had lower $R^2$ values. For instance, *ecd_pay_fees* had an $R^2$ of 0.07, indicating that other factors might influence this variable.

In analyzing household-level data, both EFA and CFA were conducted to uncover the underlying structure of the indicators. The overall KMO value was 0.89, indicating the sample's high suitability for factor analysis. Individual KMO values for each variable were also examined to ensure their adequacy.

Factor loadings were considered significant if they exceeded 0.419, again a conservative threshold to ensure meaningful relationships between variables and factors. The rotated factor pattern revealed a clear structure, with most variables loading

| Indicator | Factor 1: Child health | Factor 2: ECD quality | Factor 3: Family structure | Factor 4: Welfare income | Factor 5: ECD attendance |
|---|---|---|---|---|---|
| health_communicate_well | 0.98* | 0.13 | 0.00 | 0.01 | 0.06 |
| health_hear_well | 0.98* | 0.14 | 0.00 | 0.01 | 0.07 |
| health_walk_well | 0.98* | 0.13 | 0.01 | 0.01 | 0.07 |
| health_remember_well | 0.98* | 0.13 | 0.00 | 0.00 | 0.06 |
| health_see_well | 0.97* | 0.14 | 0.00 | 0.01 | 0.07 |
| health_selfcare_well | 0.90* | 0.10 | 0.00 | 0.00 | 0.05 |
| ecd_counting | 0.15 | 0.89* | 0.02 | 0.04 | 0.11 |
| ecd_object_naming | 0.12 | 0.88* | 0.02 | 0.05 | 0.09 |
| ecd_playing | 0.08 | 0.84* | 0.02 | 0.00 | 0.04 |
| ecd_colouring | 0.19 | 0.83* | 0.03 | 0.00 | 0.19 |
| ecd_singing | 0.01 | 0.79* | 0.00 | −0.01 | 0.00 |
| ecd_reading | 0.17 | 0.78* | 0.03 | −0.04 | 0.17 |
| fam_father_home | −0.01 | 0.03 | 0.85* | −0.16 | 0.01 |
| fam_relate_child | 0.03 | 0.03 | 0.79* | −0.13 | 0.03 |
| fam_two_parent | −0.01 | 0.02 | 0.77* | −0.04 | 0.02 |
| grant_child_support | 0.01 | 0.01 | −0.18 | 0.98* | −0.03 |
| grant_receive | 0.01 | 0.01 | −0.18 | 0.98* | −0.03 |
| ecd_pay_fees | −0.02 | 0.21 | 0.06 | −0.08 | 0.92* |
| ecd_attend | 0.45* | 0.27 | 0.00 | 0.03 | 0.76* |

*Absolute values greater than 0.408 are significant and marked with an'*'.*

**Table 1.**
*The rotated factor pattern showing loadings of indicator variables on the five extracted factors.*

strongly on a single factor and minimal cross-loadings. The four extracted factors explained 70.10% of the total variance. The rotated factor loadings suggest interpretations for the factors:

- *Food insecurity:* High loadings from indicators related to food security and hunger.
- *Home assets:* Indicators of access to private transport and modern household amenities.
- *Home utilities:* Indicators related to access to metered electricity, the means to pay for electricity, and formal dwelling status.
- *Housing quality:* Indicators related to the construction quality of dwelling walls, floors, and roofs.

These factors and the indicator variables from which they are comprised are listed in **Table 2**. Indicators related to housing size and utilities, such as the

| Indicator | Factor 1: Food insecurity | Factor 2: Home assets | Factor 3: Home utilities | Factor 4: Housing quality |
|---|---|---|---|---|
| food_foodless | 0.91* | −0.10 | −0.01 | −0.09 |
| food_variation_lack | 0.90* | −0.10 | −0.02 | −0.09 |
| food_ran_out | 0.90* | −0.09 | −0.04 | −0.10 |
| food_unhealthy_options | 0.87* | −0.11 | −0.02 | −0.09 |
| food_anxiety | 0.87* | −0.09 | −0.03 | −0.12 |
| food_skipped_meals | 0.86* | −0.07 | −0.04 | −0.08 |
| food_hungry_hhold | 0.84* | −0.06 | −0.03 | −0.10 |
| asset_private_transport | −0.11 | 0.82* | 0.03 | 0.05 |
| asset_geyser | −0.09 | 0.79* | 0.06 | 0.13 |
| asset_own_car | −0.12 | 0.77* | 0.05 | 0.08 |
| asset_computer | −0.08 | 0.71* | 0.04 | 0.07 |
| asset_home_internet | −0.05 | 0.66* | 0.01 | 0.02 |
| asset_plumbing | −0.03 | 0.64* | 0.14 | 0.15 |
| elec_metered | −0.02 | 0.06 | 0.90* | 0.03 |
| elec_access | −0.05 | 0.03 | 0.82* | 0.04 |
| elec_paid | 0.00 | 0.07 | 0.80* | 0.00 |
| elec_dwelling_formal | −0.05 | 0.10 | 0.63* | 0.18 |
| house_wall_good | −0.15 | 0.15 | 0.09 | 0.90* |
| house_floor_good | −0.15 | 0.15 | 0.08 | 0.88* |
| house_roof_good | −0.17 | 0.15 | 0.08 | 0.88* |

*Absolute values greater than 0.419 are significant and marked with an'*'.*

**Table 2.**
*The rotated factor pattern showing loadings of indicator variables on the four extracted factors.*

number of rooms, home ownership, piped water access, and sanitation, were excluded due to insufficient variability or weak correlations. Environmental factors like waste removal, pollution levels, and land degradation were also excluded for these reasons.

CFA validated the four-factor structure identified in the EFA. The model demonstrated a reasonable fit to the data. The $\chi^2$ statistic ( $\chi^2 = 6545.54$, df = 161, $p < 0.0001$ ) was significant, again common in large samples. The RMSEA of 0.07 suggested moderate fit. The SRMR of 0.04 indicated good fit, and the CFI of 0.94 exceeded the recommended threshold of 0.90, indicating good fit. The CFA therefore confirmed the factor structure identified in the EFA, with all standardized factor loadings statistically significant and generally high, ranging from 0.51 to 0.93. The model explained a substantial portion of variance in most variables, with $R^2$ values ranging from 0.26 to 0.87. However, some variables, particularly those related to dwelling formality and home internet access, again had lower $R^2$ values. For instance, the indicator *elec_dwelling_formal* had an $R^2$ of 0.26.

## 4. Multilevel regression analysis

Regression analysis examines the relationship between a dependent variable and multiple independent variables, allowing for the prediction of the dependent variable based on the values of the independent variables. This statistical approach assists the identification of significant predictors, controls for confounding variables, and makes inferences about associative relationships within the data.

Multilevel regression analysis (MRA) analyzes data structured at more than one level, accounting for hierarchical data structures, such as person and household factors. Traditional regression analysis may fail to model these dependencies, leading to biased or inefficient estimates. Multilevel models, however, account for the influence of variables at different levels, providing more accurate results.

The data is organized to reflect its hierarchical structure, with person-level data (*e.g.*, child health, ECD attendance) nested within household-level contexts (*e.g.*, household assets, housing quality). The analysis starts with a basic model that includes only individual-level predictors and progressively incorporates higher-level variables to examine the influence of broader contextual factors.

Ignoring this hierarchy can result in underestimated standard errors and inflated type I error rates. Multilevel regression models account for intraclass correlation (ICC) within groups, leading to more reliable and generalizable inferences. The ICC provides valuable information about the proportion of total variance in the outcome attributable to group-level factors, offering insights into the relative importance of context in shaping individual outcomes.

For this study, the analysis considers five key person-level factors and four household-level factors. The multilevel models were run for each of these nine factors as dependent variables, respectively, with the other eight factors as predictors.

The model fit metrics of interest are the −2 residual log likelihood, which measures how well the model fits the data; the Akaike information criterion (AIC), which balances model fit against complexity; the corrected AIC (AICC), which adjusts for small sample sizes; and the Bayesian information criterion (BIC), which is similar to AIC but penalizes model complexity more strongly. These metrics are used for model comparison, with lower values generally indicating better fit. The −2 residual log likelihood provides a measure of deviance, while AIC, AICC, and BIC allow for comparison between non-nested models, taking into account both goodness of fit and model parsimony.

The model fit statistics varied across different outcomes for the nine factors considered. The model for home assets showed the best fit with the lowest values across all fit statistics (−2 residual log likelihood: 20118.9, AIC: 20122.9, AICC: 20122.9, BIC: 20136.9), while the model for home utilities showed the poorest fit with the highest values (−2 residual log likelihood: 22873.6, AIC: 22877.6, AICC: 22877.6, BIC: 22891.7).

The regression metrics of interest are the effect size ($\beta$), indicating the magnitude of the relationship; the standard error (SE), estimating the variability of the effect size; the $t$-value, showing the ratio of the difference between the observed sample statistic and its hypothesized population parameter to the standard error; and the $p$-value, indicating the significance of the results.

ECD attendance demonstrated a strong positive influence on child health ($\beta$ = 0.42, SE = 0.011, $t = 38.83$) and ECD quality ($\beta$ = 0.35, SE = 0.011, $t = 31.46$) while family structure showed a significant positive association with home assets ($\beta$ = 0.19, SE = 0.009, $t = 19.75$) and home utilities ($\beta$ = 0.20, SE = 0.011, $t = 19.21$). Welfare income exhibited both positive and negative associations with various

outcomes. It showed a strong negative relationship with home assets ($\beta = -0.37$, SE = 0.009, $t = -39.77$) but a positive relationship with home utilities ($\beta = 0.12$, SE = 0.012, $t = 9.62$). The negative association with home assets could be due to eligibility criteria for welfare programs or the persistent economic challenges faced by welfare recipients. However, the positive relationship with home utilities suggested that welfare income may contribute to improved access to basic services.

Food insecurity emerged as a significant barrier to ECD attendance ($\beta = -0.06$, SE = 0.010, $t = -6.22$) while home assets positively influenced ECD quality

| | Child health | ECD quality | Family structure | Welfare income | ECD attendance | Food insecurity | Home assets | Home utilities | Housing quality |
|---|---|---|---|---|---|---|---|---|---|
| **Child health** | 1.00 | 0.11* | 0.00 | 0.01 | 0.37* | 0.04* | -0.03* | 0.01 | 0.02 |
| **ECD quality** | 0.11* | 1.00 | 0.03* | 0.08* | 0.30* | 0.00 | 0.14* | 0.01 | -0.05* |
| **Family structure** | 0.00 | 0.03* | 1.00 | -0.17* | -0.01 | -0.04* | 0.24* | -0.21* | 0.01 |
| **Welfare income** | 0.01 | 0.08* | -0.19* | 1.00 | 0.02* | 0.03* | -0.37* | 0.12* | -0.01 |
| **ECD attendance** | 0.42* | 0.35* | -0.01 | 0.03* | 1.00 | -0.08* | 0.08* | 0.01 | 0.04* |
| **Food insecurity** | 0.04* | 0.00 | -0.04* | 0.02* | -0.06* | 1.00 | -0.08* | -0.02 | -0.23* |
| **Home assets** | -0.03* | 0.14* | 0.19* | -0.43* | 0.09* | -0.12* | 1.00 | 0.24* | 0.22* |
| **Home utilities** | 0.01 | 0.01 | -0.20* | 0.10* | 0.01 | -0.02 | 0.17* | 1.00 | 0.12* |
| **Housing quality** | 0.02 | -0.04* | 0.01 | -0.01 | 0.03* | -0.24* | 0.17* | 0.12* | 1.00 |

*Rows represent predictors, columns represent outcomes.*
*Colouring enables quick interpretation of relationship strength where darker entried indicate stronger relationships.*

**Table 3.**
*Fixed effects matrix for the nine factors at person- and household-level (* $p < 0.001$ ).*

| Factor | Intercept variance | Residual variance | ICC |
|---|---|---|---|
| Child health | 0.341 | 0.438 | 0.438 |
| ECD quality | 0.352 | 0.443 | 0.443 |
| Family structure | 0.375 | 0.453 | 0.453 |
| Welfare income | 0.315 | 0.425 | 0.426 |
| ECD attendance | 0.277 | 0.406 | 0.406 |

**Table 4.**
*ICC and variance components for the factors at the person-level.*

( $\beta$ = 0.14, SE = 0.012, $t$ = 11.65 ). This suggested that households with more assets may be able to provide better support for ECD. The values for all fixed effects between the factors are listed in **Table 3**.

The ICC measures the proportion of total variance in the outcome attributable to differences between groups (which in this analyses are households). ICC values indicate how much variability in the outcome can be explained by group-level factors, providing insight into the extent to which household-level factors influence outcomes. Generally, an ICC of greater than 0.20 is considered high variance explained by group-level factors.

The intercept variance represents the between-group variability, in this case, the differences between households. It quantifies how much outcomes vary from one household to another. The residual variance represents the within-group variability or the differences between individuals within the same household. It captures how much outcomes differ among children in the same household. The sum of these two components gives the total variance in the outcome. By comparing these variance components, the relative importance of household-level factors versus person-level factors in explaining the variability in the ECD system is revealed. A larger intercept variance relative to the residual variance suggests that household characteristics play a more substantial role in shaping the outcome, while a larger residual variance indicates that individual differences within households are more influential. **Table 4** lists the ICC and variance values for each person-level factor.

The consistently high ICCs indicate substantial within household clustering for all measured factors. Notably, even person-level factors such as child health and ECD attendance showed strong household-level effects, implying that siblings within a family are likely to exhibit similar patterns in health status and ECD attendance. Such similarities extend to both positive and negative outcomes; households fostering good health practices and regular ECD attendance for one child are likely to do so for all children, while households facing challenges in these areas may see these difficulties reflected across all children. The generally high ICC values not only justify the use of multilevel modeling but also emphasize the necessity of considering household contexts when studying child outcomes.

## 5. Structural equation modeling

To further investigate the complex relationships between person-level and household-level factors, structural equation modeling (SEM) was employed. MRA

effectively addresses the hierarchical nature of the data by accounting for nested structures, capturing the variance attributable to individual and household levels. Complementing this, SEM allows for the simultaneous modeling of multiple relationships, providing a holistic view of the entire system of variables while accounting for measurement error. SEM extends beyond regression analysis by considering latent variables and their interrelations, enabling the evaluation of both direct and indirect effects within a single framework. SEM's global fit indices offer an overall assessment of how well the theoretical model matches the observed data. MRA and SEM together allows for the triangulation of findings to increase confidence in consistent results.

SEM demonstrated an excellent fit to the data. The $\chi^2$ statistic ($\chi^2 = 17.58$, df = 12, $p = 0.129$) indicated that differences between the model prediction and the observed data were not significant so the model accurately represented the relationships and variations recorded. This is particularly noteworthy given the large sample size where even small discrepancies often lead to significant $\chi^2$ values. The RMSEA of 0.008 suggested a very good fit, substantially below the conventional threshold of 0.05. The SRMR of 0.006 was well below the 0.08 cutoff, indicating excellent fit. Both the CFI of 0.999 and TLI of 0.998 exceeded the recommended threshold of 0.95, further confirming the model's excellent fit to the data.

Standardized path coefficients are the rescaled estimates that indicate the strength and direction of the relationships between variables, measured on a common scale with a mean of zero and a standard deviation of one. Examination of these reveals several significant relationships listed in **Table 5** and illustrated in **Figure 1**). The strongest positive relationship was observed between child health and ECD attendance ($\beta = 0.45, SE = 0.009, p < .0001$), while the strongest negative relationship was found between welfare income and home assets ($\beta = -0.40, SE = 0.009, p < .0001$).

Lagrange multiplier tests suggested potential model improvements, with the largest modification index observed for the path from family structure to ECD quality ($LM = 7.19, p = .007$). However, given the excellent fit of the current model, no further modifications were incorporated.

The regression analysis reported a strong positive relationship between ECD attendance and child health. The SEM supported these findings showing a positive influence of child health on ECD attendance ($\beta = 0.45,\ t = 46.816$). Additionally, the SEM results showed a positive influence of ECD attendance on ECD quality with similar statistics ($\beta = 0.35,\ t = 31.387$).

The regression analysis reported a strong positive relationship between family structure and home assets. The SEM results supported this, showing a positive influence of family structure on home assets with similar magnitude ($\beta = 0.18,\ t = 18.267$). However, the SEM also unveiled a more intricate picture, revealing a negative relationship between home assets to food insecurity ($\beta = -0.23,\ t = -10.459$). This additional insight demonstrated the SEM's ability to capture complex interactions that may not be apparent in regression models.

Consistently, the SEM largely corroborated the regression analysis which showed a strong negative relationship between welfare income and home assets ($\beta = -0.40$, $t = -39.415$), and a positive relationship with home utilities ($\beta = 0.12,\ t = 9.808$). The consistency in both direction and magnitude for these relationships across both analyses strengthened the validity of these findings. Given the South African context, where socioeconomic inequality is profound, it is expected that welfare income emerged so frequently as a critical predictor of various outcomes. The necessity of these welfare grants are supported as the results show guardians actively resisted the acquisition of

| Predictor | Outcome | $\beta$ | SE | $t$ value |
|---|---|---|---|---|
| Welfare income | Home assets | −0.40 | 0.01 | −42.40 |
| Child health | ECD attendance | 0.45 | 0.01 | 51.96 |
| ECD attendance | ECD quality | 0.35 | 0.01 | 32.92 |
| Family structure | Home assets | 0.18 | 0.01 | 18.50 |
| Housing quality | Food insecurity | −0.24 | 0.01 | −22.83 |
| Home assets | Housing quality | 0.29 | 0.01 | 28.75 |
| Family structure | Home utilities | −0.21 | 0.01 | −19.50 |
| Home assets | Home utilities | 0.25 | 0.01 | 20.63 |
| Home assets | ECD quality | 0.14 | 0.01 | 12.86 |
| Welfare income | Home utilities | 0.12 | 0.01 | 9.85 |
| Welfare income | ECD quality | 0.08 | 0.01 | 7.57 |
| Home assets | Food insecurity | −0.23 | 0.02 | −10.56 |
| ECD attendance | Housing quality | 0.04 | 0.01 | 4.07 |
| Home assets | ECD attendance | 0.17 | 0.01 | 15.49 |
| Housing quality | Home utilities | 0.13 | 0.01 | 12.00 |
| Home assets | Child health | 0.08 | 0.01 | 6.20 |
| Welfare income | ECD attendance | 0.05 | 0.01 | 5.04 |
| Welfare income | Child health | 0.05 | 0.01 | 4.39 |

**Table 5.**
*Standardized effects of predictors on outcomes including the estimated path coefficients ($\beta$), standard errors (SE), and $t$ -values for each relationship.*

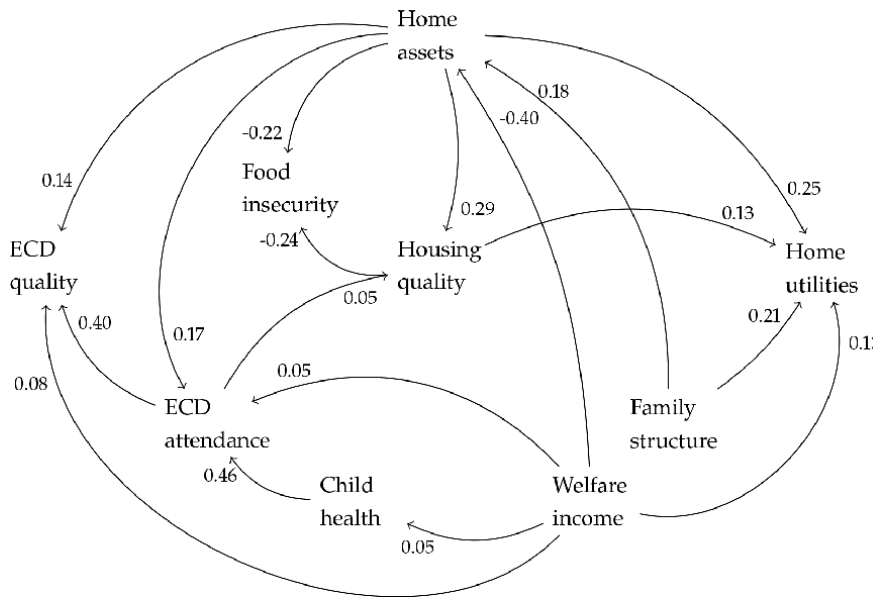


**Figure 1.**
*Relational mapping of the predictors and outcomes included in the estimated path coefficients as a network diagram.*

assets like private vehicles or home computers to instead secure electricity supply to their homes.

Interestingly, while the regression analysis identified food insecurity as a significant barrier to ECD attendance ($\beta = -0.06,\ t = -6.22$), the SEM results did not show a direct relationship between these variables. This discrepancy suggested that the influence of food insecurity may be mediated through other factors in the model which themselves then directly influenced ECD attendance. This highlights the importance of considering indirect effects in understanding complex social dynamics.

The positive influence of home assets on ECD quality was found in the regression analysis ($\beta = 0.14,\ t = 11.651$) was strongly supported by the SEM results. The SEM showed an almost identical relationship between home assets and ECD quality ($\beta = 0.14,\ t = 12.775$). This consistency across both analyses provides robust evidence for the importance of home assets in promoting ECD quality.

The SEM analysis therefore largely supported many of the key findings from the regression analysis, particularly regarding the relationships between welfare income, home assets, and ECD quality. However, it also revealed a more complex network of relationships, especially concerning the role of family structure and food insecurity. The SEM's ability to capture these complex interactions, accounting for direct and indirect effects simultaneously, provided valuable insights for understanding the multifaceted nature of factors influencing ECD outcomes.

## 6. Discussion

The findings of this study provide important insights into the intricate relationships among various factors influencing ECD in South Africa. These results align with and extend the understanding provided by key studies in the field, such as those by Ashley-Cooper *et al.* [16], Gustafsson *et al.* [17], and Mbarathi *et al.* [18], underscoring the multifaceted nature of ECD determinants and their implications for current practices and policy development.

A central theme emerging from this study is the significant influence of socioeconomic inequality on ECD outcomes. Household-level factors, particularly income and access to basic services, were found to be critical determinants of child-specific outcomes such as ECD attendance and health. This finding is consistent with previous research and reinforces the pervasive influence of poverty and inequality on ECD quality across the country. The strong association observed between welfare income and child outcomes suggests that enhancing access to social grants and improving service delivery in disadvantaged areas could have a direct and positive influence on ECD outcomes. However, while social grants provide necessary support, addressing South Africa's high unemployment rate may offer a more sustainable solution. By generating more employment opportunities, households can gain greater financial stability, reducing reliance on welfare and contributing to better long-term ECD outcomes.

Another significant insight from this study is the critical role of infrastructure in determining ECD quality. The 2022 GHS data revealed that improved infrastructure, such as well-equipped facilities and reliable access to utilities, is associated with higher ECD attendance rates and better health outcomes for children. This finding strongly supports Venter's earlier findings [19], which highlighted the importance of infrastructure in promoting ECD quality. The factor analysis further identified additional critical factors like home assets and food insecurity, which provide a more comprehensive view of the household environment's influence on ECD quality.

These results underscore the need for infrastructure development as a key strategy to enhance ECD quality. Practitioners and policymakers should prioritize upgrading facilities to ensure that all ECD centers are equipped to provide a conducive learning environment. This includes not only physical resources but also access to educational materials and appropriate learning spaces, which are crucial for supporting children's developmental outcomes.

This study's emphasis on the interconnected nature of individual and contextual factors supports the holistic approaches advocated by Hall *et al.* [20]. The findings suggest that improving ECD outcomes requires comprehensive strategies that address multiple layers of influence, from family income to infrastructure quality. The practical implications of these findings are clear: ECD interventions must be multi-dimensional, integrating efforts across sectors such as education, health, and social welfare to address the complex needs of children and their families effectively. This approach is essential to addressing the multifaceted challenges that affect children's early development and to ensuring that interventions are both effective and sustainable.

The implications of these findings for current practices are extensive. First, there is a clear need for policies that reduce socioeconomic disparities by enhancing access to employment and social support for disadvantaged families. By providing families with the means to achieve greater financial stability, these policies can reduce reliance on welfare and foster environments that support better ECD outcomes. Second, infrastructure development should be a priority, with a focus on providing well-equipped, resource-rich ECD centers that can support the holistic development of children. This is particularly important in disadvantaged communities where access to quality facilities is often limited. Finally, the adoption of integrated, multi-sectoral approaches in ECD interventions will be essential for addressing the complex and interrelated challenges that affect children's early development. By implementing these strategies, South Africa can move closer to achieving equitable, high-quality ECD for all children, particularly those in the most disadvantaged communities.

## 7. Conclusions

This study provides a comprehensive analysis of the South African ECD system, using statistical techniques to identify key factors influencing it. The 2022 GHS data, focusing on children aged newborn to six years, served as the foundation, with careful data preparation to link person-level and household-level characteristics accurately.

Factor analysis was crucial, with EFA identifying five person-level factors (*i.e.*, child health, ECD quality, family structure, welfare income, and ECD attendance) and four household-level factors (*i.e.,* food insecurity, home assets, home utilities, and housing quality). These factors offered a nuanced understanding of key dimensions influencing ECD outcomes. CFA validated the factor structure, ensuring robustness and reliability.

Multilevel regression analysis examined relationships between identified factors, revealing strong positive links between ECD attendance, quality, and child health, highlighting the role of structured activities and nutrition programs. Family structure showed a significant positive association with home assets, emphasizing the importance of stable family environments. Welfare income exhibited complex relationships, demonstrating both positive and negative associations depending on the context.

The final analysis phase involved SEM, which provided a comprehensive framework for understanding the complex interrelationships between person-level and

household-level factors. SEM revealed significant relationships, such as the strong positive influence of child health on ECD attendance and quality. Welfare income emerged as a significant predictor of multiple outcomes, underscoring its substantial influence in a country with stark socioeconomic inequality.

This study highlights the interconnected nature of individual and contextual factors in the South African ECD system, revealing the need for holistic approaches that address both educational and socioeconomic aspects. These insights can inform targeted interventions and policy development to improve ECD outcomes, particularly in addressing disparities and enhancing program quality and accessibility. The robust use of statistical techniques ensured the reliability of the findings, contributing valuable insights into the South African ECD system.

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Section 2

# Building Bridges: Equity, Participation, and Inclusion in ECE

Chapter 4

# Conditions for Children's Participation in Community in the Context of ECEC

*Marianne Ree and Geir Sverre Braut*

## Abstract

The aim of this chapter is to study factors that create conditions for children's participation in community in the context of ECEC. The research question is as follows: What emerges from children's and educators' actions and descriptions as the conditions for children's participation in community? The text is based on a reanalysis of the results from three separate studies, which are created within a qualitative hermeneutic approach, consisting of multiple approaches such as group interviews with five-year-olds, video observations of children and educators and individual interviews with educators in three selected Norwegian ECEC centres. The work is theoretically grounded in Habermas' social philosophical perspective and Biesta's notion of democracy. The combined findings from the three studies are further discussed on basis of contemporary norms on the rights of the children. The results from the synthesis indicate that children's participation in community ECEC requires adults' consciousness on framing conditions such as trust, acceptance of differences and a general orientation towards the community. The results identify core elements of a practice that can be linked to social sustainability with reference to the idea of living together in a world shared with others.

**Keywords:** ECEC, CRC, conditions, participation, community

## 1. Introduction

Children's participation in the community is closely connected to individual development [1]. Not least it relies upon educational support [2]. How to support children's participation in the society has been a returning topic in pedagogy for long times. However, it is during the last decades that children's participation has got its foundation as a legal right.

Children's rights, as described in the Convention on the Rights of the Child (CRC) in 1989, address the social and legal positions of children in society and thereby raise awareness of children's role in the community [3, 4]. Participation rights are mostly expressed in articles 12 and 13, in particular article 12, which, at its core, is about the right to be heard.

Children's right to participate as individuals was introduced as a legal right in Norwegian legislation when the UN Convention on the Rights of the Child was incorporated in 2003. The right is also founded in the Norwegian Constitution, Section 104 from 2014. It was also included in the governmental framework plan for ECEC content and tasks in 2006 [5, 6].

Researchers have previously pointed out that conventions are formulated in a general way. They emphasize the importance of discussing children's rights over and over again from different perspectives [5, 7]. Bae, who has been studying children's participation in Norwegian ECEC for several years, claims that this requires an expanded understanding of the concept of participation in ECEC and that one must critically discuss what this means for pedagogical practice [5]. Therefore, how to maintain human rights in practice has to be under continuous scrutiny based upon the particular conditions framing the everyday life of each child. However, human rights norms, also those considering children, take a highly individual perspective. How to combine such individual rights with socializing practices still appears to be quite unsettled.

Imsen adds the question of whether education should contribute to creating community in society or whether it should first and foremost promote the interests of the individual child [8]. How the children's right to participation can be understood and implemented in pedagogical practice in ECEC is therefore an unsolved challenge, and we need to develop new knowledge about participation in ECEC [9–11]. A comprehensive systematic review of research on children's participation shows that there are few studies on practices on how to promote participation [12]. This review also reveals that studies with children as participants are missing.

The article intends to present, by analyzing three separate studies partly including children as participants, factors supporting conditions for children's participation in the communities in the context of ECEC, as may be expected on basis of CRC. This is important for supporting children's rights and developing their competence to actively participate in developing ECEC institutions as democratic communities. Accordingly, the research question is as follows: What emerges from the children's and educators' actions and descriptions as the conditions for children's participation in community?

## 2. Research context

ECEC is a collective institution in which children gain early experiences of themselves in relation to others. However, research has shown that participation in ECEC is often perceived and practiced based on individual orientations in which the individual children's self-determination and choices are prioritized [9, 13–15]. Several researchers have pointed out that an individual orientation generates an overly one-sided understanding of the practice of participation and that feelings for others and for the community risk being excluded [16–18].

There is a growing interest in addressing how educators can support shared decision-making processes in which children are actively engaged [19]. Researchers have identified an emerging shift away from democracy as mainly individual influence or participation to democracy as participation from the collective perspective that goes beyond individual choice [9].

In a qualitative study using observation of different everyday situation in ECEC shows that cooperative communication with mutual participation between children and

teachers where limited [11]. In general, across all types of observed situations, cooperative communication with mutual participation was found in only 18% of the interactions. Child participation was limited or passive in the rest of the interactions [11].

Similar tendencies have previous identified that children's participation is dependent on educators' attitudes, rules and power [20, 21]. Restriction, for example in play, has negative affect on children's experience of well-being and participation in community [22, 23]. The educators in ECEC have to balance positive and negative aspects with the needs of all children, which considerable awareness [24].

Children's voices are considered when their inputs or actions are based on what the adults have planned and are consistent with the adults' expectations [11, 15, 25]. Participation is also highlighted as a tension-filled phenomenon where children balance between the active agency and adapting to expectation and the frame in the environment [26]. A sense of familiarity, trust and security are then existential for participation [22].

## 3. Existing knowledge

A collective understanding of participation is necessary for individuals to discover and realize their full humanity in community with others [27]. The community contributes to human interactions in which a mutual relationship between acknowledging responsibility and having respect for the safeguarding of the rights of others is necessary [27]. Miller adds that a focus on collective and group processes is central to the question of what is socially sustainable in the twenty-first century [28]. Sustainability is understood as the maintenance of social, environmental, political and economic dimensions and capacities. The social dimension refers to the idea of belonging to and living as a human being in a world that is shared with others [29].

Davis questions whether there is a sustainable perspective in the UN Convention on the Rights of the Child and criticizes the convention for having too much focus on the rights of the individual child [3, 30]. Her opinion is that to maintain social sustainability in the twenty-first century, and to safeguard collective rights, this focus must be changed. Experience in balancing one's own rights against the demands and prerequisites of others must be regarded as a central competence in a modern, complex society. The visibility of practices for conditions for participation in community will thus be central perspectives for the maintenance of sustainability in ECEC.

According to Tjora, community is difficult to define unambiguously [31]. Gulløv refers to communities in ECEC as conventions, routines and expectations about how children should be enabled to participate [32]. This can be seen in connection with this study's focus on the conditions for participation in community in the context of ECEC. Participation in community is seen as an intersubjective situation in which two or more children have the opportunity to participate, and to be included, accepted and engaged in community with others. It is also important that children by themselves may take the initiative in various ways and that these initiatives are followed up on and responded to by others.

Moreover, research also indicates that in situations in which ECEC educators try to share the children's perspectives, children's involvement is strengthened, and opportunities for the children's participation are provided [15, 20]. Lunn et al. indicate that when educators give children opportunities to actively participate in taking initiative, it contributes to the children's willingness to take more responsibility for others in the community [33]. However, educators tend to experience tension between balancing

the pedagogical intent to "teach" and the institutional expectations around efforts to engage children in decision-making [11, 25, 34]. Correia et al. find in their literature review on participation in the ECEC context that there is a greater focus in research on ideas about participation and, to a lesser extent, a focus on practices that promote participation [12]. Moreover, they also find that most studies on this topic are from northern European countries, primarily Sweden, Norway and Finland, which is consistent with the thematic searches of the current literature related to this study.

In summary, previous research has established that the collective perspective seems to be in the background in relation to the individual perspective and that children's participation depends on educators' attitudes, rules and power. It is also known that there is a strong orientation towards individual children's opportunities to participate. Nevertheless, there seem to be few studies focusing on the conditions for children's participation in community in the context of ECEC; therefore, more knowledge is needed to further develop democratic ECEC institutions. This study aims to contribute to filling this knowledge gap by focusing on what emerges from children's and educators' actions and descriptions as the conditions for children's participation in community.

## 4. Theoretical framework

This study is theoretically grounded in Habermas's social philosophical perspective [35]. Of particular interest are the holistic perspectives that Habermas suggests through his lifeworld and systems thought, as well as his perspectives on communicative and strategic rationality. Habermas' communicative theory of action emphasizes that educational processes take place at the intersection of individuals and society, between the lifeworld and the system. Central to such an assumption is that one sees the value of the power of communication. This means that the theory places communication at the centre of individuals' integration into society by shifting the focus from the individual subject to the interaction. Current international human rights legislation strongly emphasizes the right of the individual and the limitation of individual rights but does not necessarily encourage participation in the society from any single person. Theories on how to qualify for societal participation have to be sought, e.g. in pedagogy.

In addition, Biesta's understanding of democracy in connection with the dimensions of qualification, socialization and subjectification is complementary to the communicative action theory in this study [36]. According to him, it is central that a democratic education must maintain a balance between qualification (the development of new knowledge), socialization (becoming part of existing orders) and subjectification (the freedom to act and be in different ways). For Biesta, democracy lies precisely in challenging what exists, something the subjectification dimension opens up through safeguarding children's freedom to act and be in different ways [36]. His central message is that everyone has the opportunity to appear as a free-acting subject in community with others at the same time that one is challenged by other subjects in a world of plurality [37].

## 5. Method

This study is a reanalysis of the results from the three sub-studies in the Ph.D. dissertation by the first author of this text [38]. The primary research was based on a qualitative hermeneutic approach. It builds upon fieldwork carried out between

autumn 2016 and winter 2017 in three different residential areas in Norway, strategically selected from the BePro project sample (www.goban.no) on the basis of variation in different characteristics, such as group size (16–48 children; 3–9 adults), organizational form (department, flexible), geographical location (one rural, two urban), ECEC institution size (80–230 children) and ownership (two municipalities, one private) [38]. Most of the children involved in this study were 5 years old.

The data consist of video observations of everyday child–educator interactions, semistructured individual interviews with educators and semistructured group interviews with 5-year-old children [11, 22, 39]. The data were collected by the first author of this paper.

For the video observations, the first author used a handheld camera with a fixed microphone. The focus in the video observations was on the interactions between the ECEC educators and two or more children and documented various everyday activities such as meals, circle times, wardrobe situations, free play and adult-controlled activities in sequences of a 10-minute duration. In total, there are approximately 18.5 hours of video.

Three semistructured group interviews with 12 five-year-old children (5 boys and 7 girls) were conducted. The three interviews lasted 21, 26 and 38 minutes. They were audio-recorded and transcribed immediately afterwards. The flexibility of the semistructured interviews enabled the researchers to also capture the children's utterances in conversation, yielding more comprehensive and authentic data for synthesis.

Six semistructured individual interviews with educators in three different ECEC centres are also included in this study.

The three studies to which **Table 1** refers provide an overview of the theoretical approach, empirical materials and units of analysis. For further details on the analysis processes used in the three substudies, see Ree [38].

The synthesis is inspired by how Kvale and Brinkmann describe establishing meaning based on three steps: (1) meaning condensation, (2) meaning categorization and (3) meaning interpretation [40]. In the phase of meaning condensation, an overview of the conditions found in the three studies was obtained, and then, opinions based on similarities and variations were compressed on the basis of the results of the previous studies.

In this reanalysis, a further possibility for doing a synthesis appeared, as certain conditions seemed to extend across the different datasets used in the three separate sub-studies. The approach in this synthesis has been to identify commonalities and variations across the three primary studies and then to translate these commonalities and variations into new complementary categories that emerged as the overall conditions for participation in community.

Working with the meaning categorization, similarities and variations in the identified conditions across the results of these studies was systematized. For example, aspects that could be linked to helping, taking responsibility for others, following norms and rules and having someone to be with were identified in each study. Furthermore, we worked on coding meaningful nuances by testing the conditions in connection with each other and separately. For example, we worked with questions about whether the participants' intentions were directed towards community, which emerged in all the studies.

Ethical considerations were emphasized to ensure that the research met the guidelines approved by the Norwegian Agency for Shared Services in Education and Research (SIKT). Confidentiality was safeguarded in accordance with requirements

| Substudy | Research questions | Empirical material | Theory | Analytic unit | Analytic concept |
|---|---|---|---|---|---|
| *1* | What do children describe as hallmarks influencing their ability to participate in the ECEC community? | Three semi-structured group interviews with four 5-year-olds in each interview | Biesta | Children's descriptions of participating with others | Biesta's understanding of democracy with a focus on the subjectification dimension |
| *2* | What kind of communication patterns occur in educator and child interactions and how do these influence children's opportunities to participate in ECEC community? How can the communication patterns and the opportunities for participation in a community be understood from a lifeworld and a system perspective? | Three semi-structured group interviews with four 5-year-olds in each interview | Habermas | Communication between adults and two or more children and opportunities to participate, be included, accepted and engaged in community with others | Strategic and communicative actions, as well as system and life world perspective |
| *3* | What conditions for participation appear through the educator's descriptions of participation in the ECEC community | Interview with 3 ECEC teachers and 3 assistants | Habermas Biesta | Educator's descriptions of the work with participation in community | Strategic and communicative intentions, as well as Biesta's understanding of democracy with a focus on the subjectification dimension |
| *Summary analysis of key conditions for participation in community* | What emerge as central conditions for children's participation in the community based on children's and educators' actions and descriptions, and how can these be understood from a societal perspective? | The conditions: mutual communication, common platform, responsibility for others, trust, freedom to choose or refrain from participation, unity, children's initiative and perspective, acceptance of inequality and ECEC institutional structures and rules | Habermas Biesta | The conditions for participation in the three sub-studies | Strategic and communicative communication, and intentions, the world of life and system perspective, Biesta's understanding of democracy with a focus on the subjectification dimension<br>The conditions: mutual communication, common platform, responsibility for others, trust, freedom to choose or refrain from participation, unity, children's initiative and perspective, acceptance of inequality and ECEC institutional structures and rules |

**Table 1.**
*Overview of the theoretical approach, empirical materials and units of analysis.*

in Norwegian legislation (the act relating to personal information and general data protection regulation) and NESH's guidelines [41]. The data were therefore handled with confidentiality, coded to be anonymous and securely stored.

## 6. Results

What children themselves describe as important characteristics that affect their conditions for participating in community with others in ECEC was examined [22]. Five main patterns/categories were identified. These are referred to as: trust, responsibility for others, freedom to choose and to refrain from participating, having a common platform and adapting to institutional rules and norms.

When investigating further patterns of communication in interactions between staff and children (two or more), three communication patterns emerged: Mutual communication, supportive communication and controlling communication [11].

When examining the staff's descriptions of the conditions for participation, the following core concerns were identified: (1) Maintaining unity and acceptance of differences. (2) Defending the children's own perspectives and initiatives. (3) Ensuring that institutional structures and rules are oriented towards protecting the ECEC community [39].

Mutual communication, a common platform, responsibility for others, trust, the freedom to choose to participate or not, unity, the children's initiative and perspectives, the acceptance of differences and the ECEC centre's institutional structures and rules were conditions that emerged in the three studies analyzed here.

It appeared that questions about trust were pervasive; in the same way, questions about differences were a prominent theme in the studies. Questions were posed whether some conditions were superior/subordinate and whether they could be related. Habermas' concepts of communicative and strategic communication and intentions and Biesta's understanding of democracy, based on the subjectification dimension, are perspectives that influenced the analysis in all phases of this synthesis

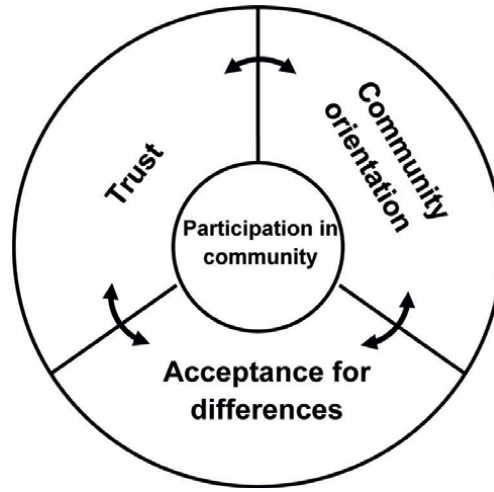


**Figure 1.**
*Summary conditions for participation in community.*

and thus have had impact on the presentation of the results. Gradually, three conditions for participation in community emerged: community orientation, trust and an acceptance of differences.

**Figure 1** illustrates the three main categories for conditions for participation in community that the results from the synthesis generated. It also makes visible the interactions among the conditions as a basis for participation in community. An overall observation is that it is difficult to participate in a community without a community orientation, without trust in each other and without a certain acceptance of differences.

## 7. Discussion

### 7.1 Community orientation

One condition that is important for children's opportunities to participate in community is attention to the children in the community and not just to the individual child. This is about taking responsibility for others and responding to and continuing the various initiatives of others. For example, the synthesis showed that one of the things the children were most interested in was having someone to be with and to belong to in the community. Taking responsibility for others is also expressed through the children's descriptions of how they support, help and include others in play and activities, as well as how they build on each other's actions and expressions together. For example, the children expressed how in imitation play (the children call it "imitation play"), they build on each other's actions and expressions and thus may create community through responding to and continuing each other's various initiatives. This shows that the children themselves are oriented towards community and participation with others.

An orientation towards community as a condition for participation was also identified through mutual communication. This is communication in which educators receive, respond to and continue the children's perspectives and initiatives. Communication is oriented towards the community and cooperation, not towards the individual child. The use of reflective and open-ended questions is also important here, and it gives the children time for common problem solving, such as deciding how to carry big and heavy ice flakes. Another central aspect of community orientation to be aware of is the frequent use of the pronouns "we", "you" and "us". Furthermore, an orientation towards creating unity among the children is central, for example, by setting up a pedagogy in which the children are included in joint conversations and joint planning.

According to Habermas, actions can only become understandable when one knows the intention behind them [35]. An interesting aspect identified in some situations in the synthesis was that actions in which the educators apparently appeared to be strategically oriented turned out to be communicative, as they were directed towards community-oriented intentions and the children's subjectification. Given the diversity of a group of children, there will always be some children who need more support than others to participate actively in the community [20]. The fact that some children have to set aside their own intentions and actions to thereby create opportunities for others to emerge as contributors may give the children democratic experiences. An example of this is making compromises, for example, during circle time or regarding who receives permission to have their voice heard.

### 7.2 Trust

Another key condition that emerged in the summary synthesis with regard to children's opportunities to participate in community was trust in the relationships one has around oneself. This includes both the educators having trust in the children as contributors and the existence of trust among the children and between the educators and the children. This is a key condition for children to dare to take initiative and thereby take responsibility, as well as to contribute to their own initiatives in play and activities. Trust can be expressed, for example, by educators describing that they want to motivate the children to be active participants in joint planning and in joint conversations. It makes visible an orientation towards confidence in the children's perspectives and initiatives. Having trust in the children, as well as creating trust among the children, appears to be a key condition that forms the basis for the intersubjective meetings between the educators and the children.

Having trust is central to children daring to take responsibility for, participate in and take initiatives in play and activities in the community. For example, trust emerged in the group interviews with the children in that they said it is fun to participate in imitation play, in which they imitate each other's actions and utterances. The children's descriptions of this play show that they must be able to trust that others will care for their initiatives in a respectful and predictable way.

Trust also means that the children surrender themselves. When they experience trust, they also lay themselves open and surrender themselves to their surroundings [42]. Then, they also become vulnerable. For example, one of the children in the group interviews expressed that he is afraid that other children will laugh at him if his star hat falls off and that he therefore does not want to be a star boy. Surrendering oneself, and thus displaying vulnerability, shows that every relationship is a power relationship. Therefore, trust is fundamental; without trust, relationships break down and are destroyed by mistrust [42].

Such an understanding of trust can also be read in how I understand Habermas' argument about meeting others with the expectation and desire to be understood and trusted through language [35]. Without expectations of trust and confidence in others, it would not be appropriate to start a discussion or to try to express oneself at all. Involvement in community requires educators to meet the children through mutual communication. Additionally, trust was also sometimes expressed by the educators acting in controlling and goal-oriented manners towards the children's community, but the intention was to open up opportunities for children who did not take initiative frequently to also have the opportunity to participate in the community.

There is a form of trust in the children as active contributors in the way that the educators care for the children's initiatives and in how they respond and pass these to other children in the community. The fact that the educators continued the children's initiatives in the community was a key aspect of the expression of participation in the community. The educator's ways of responding, confirming and continuing the children's perspectives and initiatives proved to create a reciprocity between the children in the community and the educator.

Further, this seemed to contribute to the building of a trusting atmosphere by the children themselves—as expressed in Biesta's terminology—participating in the community based on their own subjectification. Trust and security in the relationship with the educator in the ECEC centre have been emphasized in research as central to the children's ability to engage in relationships with others [43]. It has also been noted that if the educator in the ECEC centre gives the children the opportunity to actively participate

through taking initiative, this contributes to other children daring to step forward and take responsibility for others in the community to a greater extent [33, 44].

### 7.3 Acceptance of differences

A key condition for children's participation in the community is to care for and accept differences. Such differences are seen through the educators and the children accepting different perspectives and actions. This means that in certain situations and actions, they (the children and the educators) set aside their own needs and initiatives to create opportunities for others with different perspectives to step forward and participate together.

This form of pedagogy manifests itself primarily through mutual communication. When this pattern of communication was prominent, it seemed as if a form of joint decision-making arose based on the children and educators having to give something away so that others would have the opportunity to participate in the community.

Conditional acceptance of differences is also prominent in play, for example, when educators interrupt play in favour of safeguarding the subjectification of individual children, such as those who were excluded from participation. Here, questions can be asked as to whether a particular child's intentions become subordinated to the educators perspectives when simultaneously taking care of other children's subjectification. This is an approach that can contribute to the acceptance of inequalities, and through facilitating the participation of children who may not so easily come forward with their own initiatives, this approach can also provide an opportunity to participate in the community.

The democratic aspect may lie in the fact that some of the children have to submit to the benefit of others in the community. Similar tendencies are also seen in the descriptions of a couple of the girls in the group interviews when they emphasize that some of the boys in the group joke and fool around during circle time and create noise, which in turn makes it difficult for them to follow the content of circle time. The girls' statement that they want the boys who are making noise to be calm may indicate an orientation towards practices in which the children believe that one should sometimes put oneself aside (the boys who fooled around and made noise) so that others who have different perspectives could also have the opportunity to be actively involved in the community.

Another interesting aspect of the acceptance of differences that was made visible is the children's desire to be able to reserve themselves from active participation in the community. This may be seen as an element of individualistic understanding and competence with the requirement in human rights norms. For example, one of the girls in the group interviews expressed that it is sometimes good to be alone. It is worth discussing whether the children experience themselves as participants in the community if being alone is decided on the basis of their own initiative.

Research has indicated that in a group of children, there may be different conditions for children's participation, for example, restrained participation versus ongoing participation in relation to the room of action that different children experience in ECEC [45]. It has also been questioned whether children in ECEC can be involved in observing other children's activities [46]. In this way, it can be said that it is in action and through caring for differences that children's subjectivity is created. Biesta claims that a community is only democratic if it gives the opportunity to everyone to present own initiatives while also being challenged by other subjects in a world of plurality [37].

## 8. Conclusion

The aim of this study was to contribute with knowledge about participation from a collective perspective by visualizing the factors that create the conditions for children's participation in community in accordance with requirements defined in CRC. The results from the synthesis from the three underlying studies show how community orientation, trust and an acceptance of differences create opportunities for children to participate in ECEC. This contributes to the field of practice by clarifying that opportunities for children's participation in community require practices based on conditions such as trust, community orientation and an acceptance of differences. A practice in which one surrenders oneself to one's surroundings and takes initiative together with others fundamentally requires a certain level of trust in the educator and in the other children in the community. It is within the framework of the outside world and the social community that one develops [47].

It is important to emphasize here that in a group of children, there is not just one community [48]. The results of this study show the importance of children in ECEC experiencing the reality that there are many different and sometimes conflicting perspectives in a community. For a community with many different perspectives to be democratic, one must sometimes set oneself aside. Björklund and Samuelsson express similar thoughts when they argue that ECEC is a collective arena in which participation is both about adapting and about having the opportunity to actively contribute to the collective [49].

The results of this study have implications for practice in that they indicate that community orientation, trust and an acceptance of differences require an awareness of the balance between communicative and strategic intentions [35]. Such a practice can be seen in connection with Biesta's argument that a healthy community is an actively participating community in which everyone can participate in different ways [36]. In light of Davis' and Miller's perspectives on social sustainability for the twenty-first century, this balance may be that participation in ECEC is about something more than individual rights such as individual choice and self-determination but also about safeguarding the community [28, 30]. Perhaps this nuance can emphasize both safeguarding participation presented as an individual right, as every child has the right to be heard and listened to, and at the same time safeguarding participation as a pedagogical community issue, in which belonging to and living as a human being in a world that is shared with others is central.

A practice such as this creates reciprocity between the children in the community and the educators, which seems to contribute to a trusting atmosphere in that the children themselves—expressed in Biesta's terminology—participated in the community based on their own subjectivity [36]. By using such a theoretical approach, it seems to be possible to fulfill the expectations in CRC and at the same time encourage active participation in establishing and developing social relations and join in on collective efforts in society.

In summary, based on the results of the study, which were interpreted based on Habermas' communicative theory of action and Biesta's understanding of democracy, it can be argued that participation in community in the context of education deals with questions regarding how the community as experienced by children should be organized [50].

This can be seen both from a political perspective ("the system") and from many different individual perspectives ("lifeworlds"), which is the main focus of this study. Democratic schemes will always include an external side, which means that not everything can be accepted and included within a democratic ECEC practice. Biesta argues

that what makes democracy democratic is that political views can always be renegotiated [37]. He adds that the key is that democratic arrangements must be directed towards the good of the community. The results of this study can help to provide a new understanding of why and how one can facilitate participation in community by safeguarding the conditions of community orientation, trust and acceptance of differences in ECEC.

The challenge for educators, politicians and policymakers is that they must reflect on and ask questions about whether their frameworks, requirements and expectations take place on the institution's, educators and/or children's terms according to the facilitation of practices that provide the conditions for participating in community.

More research is needed to gain further knowledge on this topic. It is reasonable to assume that there are more contextual factors that may be important to investigate than those identified in this study.

## Conflict of interest

The authors declare no conflict of interest.

## Geolocation information

The empirical studies on which this study is based are performed in south-west of Norway. In this text, ECEC thus refers to Norwegian ECEC settings, which means daycare centres where children are between 1 and 5 years.

## Data availability statement

All data in this study are stored in a TSD server (service for sensitive data), and any access from other researchers to the material must take place through GoBaN's project manager.

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Chapter 5

# Perspective Chapter: Stress and Children – Playgrounds to Build Physiological and Psychological Resilience to Children's Community Capacity

*David J. Watts*

## Abstract

Stress among children is a universal challenge that transcends age and societal boundaries, manifesting through a spectrum of adverse health, psychological, and emotional effects. Acknowledging the varied sources of stress, from biological and environmental to cognitive and behavioral, underlines the necessity of fostering resilience within young individuals to enhance their adaptive capabilities and reduce stress experiences. This paper delves into the pivotal role of innovative playground design in bolstering child resilience, particularly through the integration of natural elements into play environments. Traditional playgrounds, with their focus on physical development, are reimagined to also nurture psychological well-being and emotional regulation, leveraging the therapeutic potential of nature. The concept of the seven Cs of child resilience—Competence, Confidence, Connection, Character, Contribution, Control, and Coping—serves as a foundational framework, guiding the creation of spaces that support both physiological and psychological aspects of child development. By transcending conventional design paradigms to embrace a holistic approach that prioritizes the inclusion of nature, this paper argues for playgrounds that not only entertain but also contribute significantly to the overall well-being and healthy development of children, equipping them with the resilience needed to navigate the stresses of life.

**Keywords:** child stressors, child's resilience, built form playgrounds, nature, competence, confidence, connection, character, contribution, control, coping

## 1. Introduction

Stress is a shared societal problem of all ages, and no one can escape the problems addressed by all. Children under stress are affected by adverse health issues, damaging psychological and physical impacts, and lowering ability to control emotions. A variety of stressors range on a child's daily basis from biological, cognitive, and behavioral sources to environmental factors. Examining a child's development for

resilience tools to build their plasticity and diminish stress experiences is significant. It is essential to foster children's resilience capacity and mitigate stress's physiological and psychological impacts. One significant theory today is the seven Cs of child resilience, which addresses the attributes supporting stress reduction. The seven are Competence, Confidence, Connection, Character, Contribution, Control, and Coping [1]. Applicable to the theory is an understanding of the playground as an invaluable resource for a child's well-being. Creating play environments that support a child's overall development and success in life is crucial. Traditional playgrounds have primarily focused on developing children's muscular system and gross motor skills. However, it's now essential to also consider the development of the nervous system.

Nature can be an underappreciated aspect of playground design, offering a unique combination of spatial layout and natural elements for children to engage with play. Integrating nature into play environments can help children build resilience and reduce stress, ultimately promoting their overall well-being. This is especially important as it can help children better control their emotions and reduce the risk of health issues. As we design playgrounds, we aim to address children's development's physical and psychological aspects. By creating thoughtful spatial environments and providing appropriate play tools, we can significantly contribute to their well-being. It's essential to move beyond traditional approaches and focus on supporting children's physiological and psychological resilience in today's changing society.

Through a more holistic approach to modern playground design, we can enhance children's overall well-being. Nature should be recognized as a valuable resource in creating engaging play spaces. It can contribute to improving children's resilience and reducing stress levels. By developing innovative playground designs that consider physical and psychological well-being, we can help children overcome challenges and guide them toward healthy development.

## 2. Stressors

The issue of stress in children is both significant and multifaceted, differing markedly from the stress experienced by adults. It is crucial to understand the unique ways in which children cope with stress, as it can have both positive and negative effects on their lives, often starting from a young age. Identifying children who are struggling with their well-being is essential for providing appropriate support [2]. Children are deeply influenced by their surroundings, and research has pinpointed a variety of stressors that impact them. These stressors encompass environmental, cognitive, and behavioral factors that children encounter daily [3]. They can range from everyday annoyances and experiences that affect their daily life to catastrophic events such as natural disasters, which can lead to significant emotional distress [4]. The loss of a home due to a flood, for example, can instill a sense of isolation and loss in children, affecting their recovery process and their ability to contribute to community building capacity [5]. Additionally, the life experiences of some children, such as those facing temporary poverty or unstable housing situations, serve as significant stressors. Transient poverty may not change a child's physical environment drastically, but experiencing environmental poverty can severely alter a child's surroundings and lead to toxic stress. This stress can be compounded by physical factors like sub-standard housing, which might expose children to unhealthy living conditions, including leaking roofs, peeling paint, and the presence of rodents. Overcrowding and family turmoil, often associated with low socioeconomic status, can further exacerbate stress,

impacting children's sleep patterns, health, privacy, and even their cognitive development. Cognitive functioning is impaired in their attention to study, concentration, memory, and reading ability. Family turmoil can affect children, who tend to have less responsive parenting in these homes. They also experience a lack of warmth or control from their parents, and there is often an increased display of aggressive parents or older siblings with the individual children [6]. Moreover, children face daily environmental stressors, including interactions with teachers and peers, experiences on playgrounds, and family dynamics at home. These stressors can disrupt a child's sense of security and safety, leading to elevated anxiety levels [7]. Biological stressors also play a significant role in affecting children's daily lives. Health issues, ranging from minor illnesses to chronic conditions such as asthma, diabetes, and obesity, can hinder children's activities and impact their mental health [8]. Over 40% of school-age children have at least one chronic health condition, underscoring the importance of daily management and the potential for long-term effects on mental health, including depression and anxiety [9]. Hunger and pain are critical biological stressors, with the recent COVID-19 pandemic introducing new challenges for children. Food insecurity, particularly prevalent among children experiencing poverty or homelessness, can significantly hinder their physical growth, brain development, and immune system function [10].

The COVID-19 pandemic has had a profound impact on the physical and mental health of children and adults, as well as on society as a whole. It has led to significant changes in daily activities and has had detrimental effects on various aspects of health. For children, the pandemic has resulted in difficulties stemming from limited understanding of the circumstances surrounding COVID-19 and isolation from their peers, friends, and family members [11, 12]. Quarantine events have been associated with altered levels of steroids and brain neurotransmitter development, which have been linked to the effects of isolation on children. The pandemic has also led to an increase in weight and has contributed to unexpected cases of childhood obesity, with a variety of hormones and an active endocrine gland affecting appetite and insulin resistance [13, 14]. Elevated cortisol levels in the brain have further contributed to increased food intake, potentially leading to increased obesity in the future. Research has demonstrated that sleep quality has been impacted by COVID-19, causing stress in both adults and children [15].

Children's stress can stem from various sources, including trauma from abuse, loss, natural disasters, or witnessing violence, potentially resulting in Post Traumatic Stress Disorder (PTSD). Symptoms typically unfold over time, with safety and support from family and educators being crucial in the initial treatment phase. Acute stress disorder, similar to PTSD but with a faster onset, emerges in response to immediate stress, often affecting maladaptive thoughts and experiences [16]. Examples of such changes include moving to a new home, starting at a new school, or experiencing parental separation or divorce [17]. These changes can induce moodiness, irritability, and anger, underscoring the importance of stability and support in mitigating stress's impact on children. Understanding and addressing these factors are key to fostering a supportive environment that promotes healing and resilience in the face of stress and trauma.

Life changes may be good or bad for every child, and this can provoke stress and affect their responses. These can include events such as a family moving to a new home, a child starting a new school, or even parents engaging in a separation or divorce. Children can be particularly vulnerable to uncertainty and change from their daily routine when their coping skills do not address stress and overcome their emotional maturity [18]. It can include behavioral responses, from moodiness to irritability, anger, and resentment, which hurt the child.

## 3. Resilience

The concept of "resilience" has its roots in Latin, stemming from the combination of "re," meaning back, and "salire," meaning leap or jump. This term encompasses a wide range of definitions and interpretations. According to the Cambridge Dictionary, resilience refers to the capacity to return to a state of happiness, success, or well-being after undergoing a period of adversity. The US Department of State, on the other hand, defines resilience as the ability to adapt to stressors while maintaining psychological well-being in the face of challenges or hardships [19]. Within the field of ecology, the concept of resilience emerged in the 1970s and has since evolved through systems theory, examining the influences that impact the sustainability of larger systems. Resilience involves dealing with disturbances within a system and utilizing appropriate resources to restore a desired equilibrium, a concept that applies to individuals, organizations, and communities [20].

Resilience theory has been the subject of extensive research and is effectively articulated in the work of Fergus and Zimmerman, offering a conceptual framework for adopting a strengths-based approach when understanding child and adolescent development. Given the significant stress and pressure experienced by children in today's society, it is crucial to establish strategies that foster resilience and mitigate physiological and psychological impacts. Resilience can be understood as the ability to "bounce back" after encountering challenges and difficulties. Developing resilience in children's core character traits can guide them toward positive behavioral and experiential outcomes. There are several types of resilience that can aid children in coping with various stressors. Physical resilience involves addressing the body's role in health and recovery from physical demands and illnesses, emphasizing healthy lifestyle choices such as proper nutrition and avoiding excessive alcohol or smoking. Mental resilience enables flexibility in adapting to changing circumstances and overcoming obstacles, supported by the components of thinking, feeling, and action. Emotional resilience focuses on regulating emotions in both adults and children, linked to emotional intelligence. Caregivers to strengthen a child's confidence and resilience [21, 22].

The significance of the playground today is an invaluable child's resource to their daily life for physical and psychological development and grappling with stress. Bronfenbrenner's ecological system theory identifies the playground as a factor within the microsystem that includes family and school. His theory identifies how a child's development is affected by interconnected environmental systems [23]. The playground in the first level of the theory communicates how important it is for children in their immediate environment. It is a valuable space of their actions, beliefs and abilities to expanding their development every day. The problem today is diminishing time of play for the child and lacking the resources needed for the construction of playgrounds. Even since Covid 19, research has identified that play is vital and important of parents, but half of them do not want their children using playgrounds and the equipment [24]. In schools today, recess time has been cut down or it has been eliminated focusing on academic outcomes with the One Child Left Behind Act. There is now research showing how invaluable the recess and playground time can be for child development of physical and psychological well-being [25].

A part of research of a child's state of health developed is that of Dr. Kenneth Ginsburg's work that highlights part of the child's psychological well-being to tackle stress. He has generated a guideline encompassing the attributable seven "C"s of resilience for children: competence, confidence, connection, character, contribution,

coping, and control [1]. While resilience is not a singular entity, it represents a combination of resources to alleviate and manage stress in a child's daily life. The playground is invaluable to a child's landscape from over a hundred and thirty years and has physically evolved from traditional built form spaces continuing today with alternative to nature playgrounds. The following provides the possible applicability of Dr. Ginsburg's theory and how this can be applied in the playground today.

## 4. The seven C's

The following section is to explore the attribute each of the seven "C"s building resilience and interpret how playground landscapes can promote the well-being of children. With either traditional built forms or nature based playgrounds, both are reexamined to consider the traditional elements found in alternative interpretation of components applied in a playground.

### 4.1 Competence

Children's competence makes them feel more capable and empowered when they are allowed to test themselves. Building the competence of a child is helping children to make their own decisions and recognize a child's measurable achievement by mastering new skills in their development. It is also about testing a child and their ability to handle challenging circumstances by themselves for age-appropriate tasks. When competent, the child feels more capable and powerful when parents allow them to test themselves. Striving competence for a child builds their self-esteem and instills a sense of responsibility [26]. The playground can incorporate designed solutions that manifest significant or minor physical development in activities such as jumping, climbing, or running. The playground provides an environment for children to test and enhance their capabilities, contributing to their sense of competence.

#### *4.1.1 Built form*

The climbing structures commonly found in playgrounds are designed by various manufacturers (**Figure 1**). They are intended for connective play, offering children a range of climbing, sliding, and exploring activities within one structure. A particularly popular element is a slide that challenges children to climb upward. This activity benefits children by promoting bilateral coordination, motor planning, memory skills, and balancing mastery.

#### *4.1.2 Nature*

An example playground was designed for a daycare and included a rain garden with a small depression and a small arched mound of 18′-24″ height giving it a sense of a bridge for the children to learn walking uphill. In the first day of the playground, children were not capable to navigate this design element and numerous children fell. Concern that modification for the layout was necessary, it was found on the second day that the children were successful with excitement and enjoyment engaging the playground element. Their individual competence in the playground elevated their resilience and found the solutions to use the space.

**Figure 1.**
*Typical climbing structure in a built form playground. Climbing Structure. Source: Watts.*

## 4.2 Confidence

Confidence is a fundamental component of a child's emotional development, fostering a deep sense of self-assurance and reliability. It plays a crucial role in shaping their optimistic outlook and empowering their individual sense of control. The playground serves as an environment for the exploration of children's psychological and social development, offering them opportunities to better understand and navigate their mental and social growth.

### *4.2.1 Built form*

The design of climbing structures incorporates elements that encourage children to face and conquer new challenges while addressing their individual concerns and fears. Well-designed playground structures support children's cognitive development by enhancing their spatial awareness, balance, and confidence. When a child climbs around in the playground, it demands unwavering determination and cultivates mental resilience as they strive to ascend vertically from ground level to greater heights. The act of climbing encompasses risk, and prompts children to confront the potential for harm and requiring them to summon their courage in order to prevail, thereby fostering and reinforcing their confidence and self-esteem [27]. Climbing structures are a ubiquitous feature in modern playgrounds, all with the shared goal of fostering resilience and building confidence in children. They come in various spatial configurations and are typically constructed using materials commonly found in playgrounds, with a primary focus on promoting physical activity (**Figure 2**). Typically found with:

- horizontal ladders
- ring climbers
- parallel bars

**Figure 2.**
*Extensive climbing structure in built form playground. Climbing structure. Source: Watts.*

- net climbers
- stairs to attain platforms

*4.2.2 Nature*

The natural environment offers a more adaptable and malleable play space compared to traditional playground climbing structures. Children not only climb to explore heights, but also traverse diverse natural terrains, fostering confidence and resilience. For instance, a rain garden playground allowed children to confidently interact and navigate the landscape alongside friends. Each child is individually challenged by the landscape, empowering them to build their own confidence and succeed. Walkways, play surfaces, hillsides, boulders, logs, and trees present dynamic opportunities for interactive play, encouraging children to take calculated risks in the natural landscape (**Figure 3**).

### 4.3 Connection

Connection is a close and healthy relationship in which children can have a sense of security, giving them a solid foundation to overcome challenges and interact independently with their daily environment. Author Ellen Galinsky identifies a child's life skills, including similarities, differences, relationships, and making unusual connections [28]. Children learn to understand their connections, which is invaluable in helping them learn team-building and problem-solving with other people. Learning to collaborate in team building, problem-solving, and encouraging others to do the same is an essential aspect of the playground environment.

Playgrounds are intentionally designed to provide a safe physical and emotional development space, nurturing resilience. It is significant with playground spaces

**Figure 3.**
*Nature based playground in tree stump climber. Tree trunk in the playground. Source: Watts.*

that encourage children to explore their play to make those vital connections with the environment. They serve as communal areas that foster meaningful connections among children, allowing them to engage with their peers and form lasting companionships within the community. The natural landscape can be invaluable in enlightening children to think outside the box and allowing them to find alternative solutions in daily life. It is invaluable to the dynamic observations of the children and the environmental experiences correlating to their interconnecting relationships.

### *4.3.1 Built form*

The playground's common area is defined by its surfacing, which can be made of solid rubber, grass, sand, or engineered wood fiber. This surfacing plays a crucial role in creating a strong physical connection to the spatial activities within the playground, especially for children. Safe playground surfaces are essential for providing a sense of security and safety, fostering a feeling of connectivity within the area. The choice of playground surface also influences children's sensory experiences, impacting visual and tactile perception. For example, a solid rubber surface can visually delineate different activity areas within the playground while offering a unified, cushioned ground plane. Additionally, this type of surface can promote a sense of camaraderie among children, encouraging collaborative play and creating a shared space for social interaction. Ultimately, safe playground surfaces are paramount in ensuring the physical security of children and fostering a sense of inclusive connectivity within the designed area.

*4.3.2 Nature*

Different surface materials in natural playgrounds, like bark mulch, grass, stone, and sand, significantly enhance sensory experiences and resilience. These materials offer unique visual, tactile, and aromatic qualities that influence children's interactions with the environment. For example, grass provides a soft surface for reflection, while bark mulch encourages exploration. Stones can make children pause and think, whereas sand promotes creative play and connectivity. Each material plays a vital role in engaging children and connecting them with nature.

**4.4 Character**

Refers to the essential qualities or features of something that are invaluable and are shaped by their environment, leading to a strong sense of sensitivity. The design solutions for the playground aim to enhance the environment, fostering children's ability to come together, engage in play, and explore the landscape. It is essential to distinguish those qualities or features of something that are invaluable and generated by an environment and constitute their strong sense of right and wrong value. Significantly, it strengthens the child's awareness of empathy and caring for others [1]. Creating an environment that helps build character and resilience, the playground will contribute to developing children's social-emotional skills and encourage cooperative play for problem-solving and language development. Additionally, the space will provide opportunities for children to interact with each other, highlighting the importance of community, sharing, and moral development [29].

*4.4.1 Built form*

The various components such as climbers, swings, rockers, bouncers, and spinners, serve as invaluable tools to bring children together in playful exploration. Each element promotes imaginative play and encourages interactive physical motion among children. For instance, the oscillating movement of certain play elements, like rockers, requires the engagement of at least two children, fostering cooperative play. Similarly, spinners necessitate children to exert centripetal force to maintain the movement, promoting shared physical activity. While swings are highly sought after by both children and adults and can be enjoyed individually, sharing a swing promotes collaboration, sharing values, and individual morals. This shared experience also presents an opportunity to teach compromise and fairness by taking turns and considering others' enjoyment.

*4.4.2 Nature*

The key component in a natural playground is the sand pit, which facilitates collaborative, creative, sensory, and practical play among children. By working together to craft imaginative landscapes using rocks, twigs, and flowers, kids learn how to negotiate, cooperate, build friendships, and handle disappointment. Additionally, the playground can feature an "archaeological pit" where kids can dig and discover buried artifacts under layers of sand, gravel, or bark mulch. This activity encourages teamwork and functional play as children explore and uncover hidden treasures together.

### 4.5 Contribution

Involves the growth of empathy and values in children, creating environments that encourage them to actively participate in their communities. When children are exposed to such environments, they are more likely to develop a personal understanding of the importance of helping others and treating them kindly. Playgrounds play a crucial role in fostering this sense of contribution, as they provide valuable opportunities for children to socialize and collaborate. Purposefully designed playground elements can greatly influence collaborative play and contribute to positive outcomes in terms of building resilience and a sense of community.

#### *4.5.1 Built form*

The contribution to resilience through inclusive design and universal design principles is most evident in the playground (**Figure 4**). Play structure components are designed to bring together disabled children and all children, creating a rich and sensory environment that facilitates holistic development. Each playground component is carefully selected to provide an appropriate level of challenge while meeting the individual needs and interests for success.

One of the initial considerations is the ground surface material, which is crucial for ensuring mobility and access throughout all spaces. Typically, rubber playground tiles or pour-in-place rubber are used to guarantee maneuverability. Climbers are often the focal point of playgrounds, and it is important for the design to incorporate ramps into each level, allowing all children to enjoy the challenges and sense of adventure provided. Additionally, educational panels can be integrated into the playground components to provide children with the opportunity to learn new languages, such as Spanish or sign language (**Figure 5**).

**Figure 4.**
*Ramp for a climbing structure at the built form playground. Ramp from Landscape Structures. Source: https://www.playlsi.com/en/commercial-playground-equipment/playground-components/ramp-deck-to-deck/.*

**Figure 5.**
*A language panel in the built form playground. Language panel (Landscape Structures). Source: https://www.playlsi.com/en/commercial-playground-equipment/playground-components/sign-language-panel2/.*

### *4.5.2 Nature*

Designed gathering spaces include natural features like glades, meadows, and meads, as well as human-designed elements such as the council ring created by landscape architect Jens Jensen. The council ring is a continuous circle of stone benches located at the edge of a meadow, allowing people to sit and share stories and discussions without a central table, symbolizing democracy and the connection between people and nature, including native plants (**Figure 6**).

**Figure 6.**
*A council ring in the nature park. Council Ring. Source: http://fourteeneastmag.com/index.php/2021/06/06/the-landscapes-of-jens-jensen-dynamism-in-nature/.*

In natural playgrounds, it is important to bring children together with an awareness of native plants. Although they are at the bottom of the food chain, native plants are vital to ecosystems, supporting necessary food production and pollinator populations. Teaching children the significance of their role as environmental stewards fosters an appreciation for the beauty and importance of native plants while also benefiting the environment by reducing air pollution, minimizing the need for fertilizers and water, and preventing potential erosion.

Engaging in food gardening is an activity that allows children to contribute to their community and socialize with others. Through this experience, children can learn about growing food, nutrition, and the importance of healthy eating. Studying the ecosystem, including the soil, climate, and plants, through the process of planting, nurturing, and harvesting seeds over time, helps children better understand and appreciate the interconnectedness of life.

### 4.6 Control

Children's resilience is evident in their choices, reflecting their internal control. Its important to crucial sound decision-making. This sense of control is crucial in helping children develop the capacity to make sound decisions as they recognize the impact of their choices. Playgrounds enhance physical balance and social skills, while music that is a universal language, it serves as a unifying force, both aiding in self-awareness and decision-making skills. These elements contribute to children's resilience by allowing them to understand and control their actions' physical and mental consequences, encouraging engagement in physical "risky" play, and fostering a sense of control over their circumstances.

#### *4.6.1 Built form*

The design and layout of communal activity spaces play a significant role in promoting social skills among children. For instance, incorporating musical instruments into playgrounds can help children manage their internal emotions and self-regulation. Various instruments such as horns, bells, chimes, and drums can provide children with a sensorial experience and help them control their emotions. Additionally, creating music and engaging in active music making in the playground can further contribute to nurturing resilience in children.

In today's technologically advanced era, interactive electronic equipment has emerged as a new addition to playgrounds (**Figure 7**). This equipment not only provides children with a unique experience but also fosters self-awareness and social skills. Furthermore, the integration of video gaming with exercise in playgrounds allows children to understand the impact of their decisions while playing and gain insight into their individual control over their responses.

#### *4.6.2 Nature*

The integration of new electronic technology in children's experiences combines visual and audio stimulation with the natural world, aiming to foster control, resilience, and positive decision-making. It enhances interactions and promotes environmental engagement. Butterfly gardens, as microcosms of nature, allow children to engage in conservation, observing butterfly metamorphosis to understand their crucial role in pollination for ecosystem health (**Figure 8**).

**Figure 7.**
*Memo activity Zone in a built form playground. Memo Activity Zone. Source: https://mrcrec.com/blog/interactive-playground.*

**Figure 8.**
*Butterfly garden on a nature playground. Butterfly garden. Source: Watts.*

Additionally, worm farms offer children a hands-on experience in understanding the significance of the ecosystem and the life cycle. By observing the activities in both the butterfly garden and the worm farm, children are encouraged to reflect and interpret the changes in the fauna, fostering resilience and a deeper connection with nature.

## 4.7 Coping

The definition of coping is dealing with overcoming problems and difficulties, whether they are internal or external stressful circumstances. Since children are not born with coping skills, it is more inclusive combining the first five attributes of the 7Cs - competence, confidence, connection, character, and contribution that helps them develop resilience. There are various coping strategies including with physical engagement as well as changing a person's physical environment to alter their experience. Outdoor play allows children to engage with peers and find quiet spaces to face challenges. Providing varied spaces is key for overcoming obstacles and building resilience, including private areas for reflection and communal spaces for group interaction. Access to diverse environments supports children's coping strategies and resilience.

### *4.7.1 Built form*

The design of traditional playgrounds is typically intended to accommodate larger groups of children within limited space options. These playgrounds are planned to cater to multiple users simultaneously, with play structures strategically positioned according to the required fall zones for each activity. The choice of surface material also plays a crucial role in delineating these spaces and ensuring safety during play (**Figure 9**).

These spatial configurations contribute to and enhance the resilience of individual children. However, smaller, more personalized spaces within playgrounds are currently limited, which may hinder a child's ability to exercise control and build resilience. Examples of creating smaller playground spaces include the addition of a built

**Figure 9.**
*Constructed wall panels for a built form playground. Panels for spatial separation in the playground. Source: Watts.*

**Figure 10.**
*Willow tunnel on a nature playground. Willow tunnel. Source: Watts.*

playhouse or the use of concrete vertical panels to define and separate areas, resulting in distinct play zones and the potential for imaginative play.

*4.7.2 Nature*

The inherent value of nature lies in its ability to foster resilience, a crucial attribute that can benefit children of all backgrounds. A nature playground, thoughtfully designed to incorporate plant-based elements such as mazes, tunnels, swings, climbers, and loose natural objects, presents children with opportunities to navigate and cope with stressful experiences. Each child can uniquely engage with these natural features, offering diverse solutions for managing stress.

The natural landscape, shaped by various microclimates, topography, and flora, inherently creates distinct spaces that cater to reflective solitude or communal enjoyment [30]. By carving out smaller spaces within a larger landscape, changes in solar shadow patterns and the canopy of trees can significantly impact the experience of light, shade, and tranquility (**Figure 10**).

Pathways and small nodes interspersed among glades and woodlands further enhance the nature playground experience, offering multiple avenues for individuals to cultivate resilience within this natural environment.

## 5. Discussion

The purpose of this study suggests that integrating the 7Cs model into resilience-building practices in playground design can offer a structured approach to parents, public, practitioners and landscape architects to support children facing daily stress. The playground is an invaluable tool for the physical growth of gross motor

skill involving large muscle groups and the fine motor skills of precise movement is championed for individual progression of maturity. It is also a place to elevate a child's psychological development to ascertain tools for stress and overcoming daily issues. Resilience is invaluable for building a child's skills, competency, empathy and self-confidence [31]. The phenomenological study is examining the applicability of the 7Cs theory model of Dr. Kenneth Ginsburg to build children's resilience affected by daily stress experiences. The study examines to understand stress, and the playground environment as an invaluable resource to build children's well-being. The examination of research addresses applicability of all seven attributes that can be found in traditional built form playgrounds and nature based playgrounds in the landscape today.

There are a limited number of studies found that addresses Dr. Ginsburg's theory as a model in its use. From a study at the University of Vermont it addressed how the model has been used across various schools in Vermont employed it as a building block for children in the classroom to strengthen the public's community capacity [32]. Another study examined an outreach program addressing a multitude of students at risk that employed the 7Cs as a tool to validate and measure succinct resilience success of the children in the program [33].

One clear study was found that identifies the relationship between the 7Cs and nature based playgrounds that extends the conversation of this study. An international study from New Zealand of an ethnographic approach examining early childhood educators and considered the application of loose play objects in a nature based playground. The study determined that attributes of the 7Cs model were actively correlated with the play elements in this environment [34].

Throughout my career as a licensed landscape architect and professor, I have encountered numerous instances where children grapple with stress such as peer pressures, family dynamics, and social relationships. I have observed children's development of confidence and connection with their feelings of isolation during stressful times. I recognize my personal experiences may introduce biases into my research and the lens through which I view the implementation of the 7Cs is inevitably colored by my interactions with the children I've worked with. To address potential bias, I have employed several strategies. I engage my reflective practice with documentation of my observations about ongoing work. Additionally, I have sought feedback and comments from my students and colleagues to ensure a more holistic understanding of my work.

## 6. Conclusion

In conclusion, this study highlights the critical link between resilience and playground design in promoting children's development. By integrating nature and focusing on the seven Cs of child resilience, modern playgrounds can significantly enhance children's psychological and physiological well-being. This research advocates for a shift toward holistic and nature-integrated playgrounds that not only encourage physical activity but also foster resilience, preparing children to navigate life's challenges more effectively.

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Chapter 6

# Perspective Chapter: Entrepreneurial Coaching as a Framework for Enhancing Participation and Lifelong Learning in Preschool Education

*Vivi Gumula Rafaelsen, Marcia Håkansson Lindqvist and Jaana Seikkula-Leino*

**Abstract**

This chapter proposes a comprehensive framework for entrepreneurial coaching to investigate its pivotal role in fostering participation in preschool education. The chapter makes a significant contribution to academic discourse by emphasizing two primary areas: firstly, by underscoring the essential nature of active participation in early childhood education and the need to provide equal developmental opportunities within preschool environments; and secondly, by introducing a theoretical framework for entrepreneurial coaching that aims to elevate teaching practices in preschool education. Entrepreneurial coaching, which integrates perspectives from psychology, sociology, entrepreneurship, and pedagogy, seeks to enhance participation, promote lifelong learning, establish inclusive and safe learning environments, and eradicate educational discrimination, all of which align with Sustainable Development Goal 4 (Quality Education). This chapter endeavors to bridge the gap between understanding participation as a child's capacity to influence their own learning and recognizing participation as a fundamental democratic right. It illustrates how preschool educators can create conditions conducive to participation by embedding concepts such as belongingness, availability, interaction, recognition, commitment, and autonomy into their pedagogical practices. Participation is conceptualized as both an individual and organizational responsibility that is indispensable for ensuring equal opportunities for lifelong learning. Entrepreneurial coaching emerges as a vital tool for preschool educators, equipping them to cultivate participation effectively at both individual and systemic levels.

**Keywords:** entrepreneurial coaching, participation, preschool education, lifelong learning, inclusive education, sustainable development goal 4

# 1. Introduction

## 1.1 Background and rationale

Participation in preschool education is a cornerstone for cultivating inclusive and democratic learning environments. Contemporary educational policies increasingly emphasize the importance of active participation as a mechanism to ensure that all children, regardless of their backgrounds, have equitable opportunities for development. This chapter introduces entrepreneurial coaching as an innovative and strategic approach to enhance participation in preschool settings. Entrepreneurial coaching synthesizes insights from psychology, sociology, entrepreneurship, and pedagogy to create environments that are inclusive, safe, and supportive of lifelong learning while actively combating educational discrimination. This aligns with the objectives of Sustainable Development Goal 4, which advocates for inclusive and equitable quality education for all [1].

## 1.2 Objectives of the chapter

The objectives of this chapter are twofold: (a) to highlight the critical importance of active participation in preschool education and the necessity of providing equitable developmental opportunities for all children, and (b) to introduce a theoretical framework for entrepreneurial coaching that can transform preschool teaching practices and empower educators to act as facilitators of meaningful participation.

# 2. Theoretical framework

## 2.1 Rethinking participation and inclusion in preschool education

Participation in preschool education must be reconceptualized not merely as children's involvement in activities but as their fundamental right to actively shape their learning experiences. This view is substantiated by the United Nations Educational, Scientific and Cultural Organization's (UNESCO's) "Right to Education – Handbook on the Convention on the Rights of Persons with Disabilities" [2], which stresses the significance of inclusive education that respects every child's right to participate actively in their educational journey. Similarly, the Swedish curriculum "A School for All" promotes a shift from a compensatory to a relational perspective, whereby challenges are framed as interactions between the individual and the environment rather than as inherent deficits within the child [3, 4]. Both the UNESCO report and the Swedish approach advocate for educational environments where all children are entitled to fully engage in and shape their learning experiences. According to the Swedish National Agency for Education (SNAE), participation is thus positioned as a crucial element for nurturing a lifelong love of learning and ensuring that every child has the opportunity to realize their full potential [5].

In the National Swedish School Act (NSSA), the mission of the preschool is defined and specifically focuses on providing all children with beneficial conditions for learning. This is expressed as follows: "In education, the different needs of children and students must be taken into account. Children and students must be given support and stimulation so that they develop as far as possible. An endeavor must be to balance out differences in children's and students' conditions to take up the education" ([6], Ch 4, §2).

The mission of the preschool is specified further in the national curriculum for preschool [5]. The preschool must promote all children's development and learning as well as promote a lifelong desire to learn. Children must receive an education that is both designed and adapted to the needs of the children in order for them to develop as much as possible. In the curriculum, the need to create conditions for lifelong learning should begin in preschool: "Preschool education must lay the foundation for lifelong learning. It must be fun, safe and educational for all children. The education must be based on a holistic view of children and their needs, where care, development and learning form a whole" [5]. Further, preschool teachers need to take heed to provide a learning environment that is both safe and supportive:

The preschool must offer the children safe care and has an important role in contributing to the foundation of the children's security and self-esteem. The education must be characterized by care for the child's well-being and security. All children must experience the satisfaction and joy of making progress, overcoming difficulties, and being an asset to the group. The preschool must give the children the opportunity to develop a positive perception of themselves as learning and creative individuals. Therefore, children must have opportunities to discover, wonder, explore, and acquire and shape different knowledge and experiences [5].

In the Swedish context, the curriculum for preschool also includes teaching. The teaching should involve stimulating and challenging the children to learn with the goals of the curriculum as a starting point. The curriculum also provides direction and aims for the development and learning of the children. Teaching in preschool must be based on content that is planned. However, teaching content may also arise spontaneously as children's development and learning take place all the time.

The curriculum specifies that the preschool must offer the children safe care. The preschool also has a crucial role in contributing to the foundation of the children's security and self-esteem. In summary, education in preschool must be characterized by care for the child's well-being and security [5]. This is exemplified in the curriculum, which states clearly that teaching in preschool, teaching should "give the children the opportunity to develop their capacity for empathy and concern for others by encouraging and strengthening their compassion and empathy for other people's situations" ([5], p. 7). For preschool teachers, this means supporting all children in their everyday learning. Preschool teachers are crucial in creating a learning environment which meets the children's needs through a "living social community that provides security as well as the will and desire to learn. Children create context and meaning based on their experiences and way of thinking. Therefore, in the preschool they must meet respect for their person and their way of thinking and understanding the world around them" ([5], p. 7). Therefore, the role of the preschool teacher is important to support children's learning: "The attitude of everyone who works in the preschool, and the way they act and talk about something, affects the children's understanding and respect for the rights and obligations that apply in a democratic society. Therefore, everyone who works in the preschool is important as a role model" ([5], p. 7).

In the curriculum, competencies described as entrepreneurial learning and social competence are also present. The result of the learning activities should lead to:

> *The education must be conducted in democratic ways and lay the foundation for a growing interest and responsibility for the children to actively participate in society and for sustainable development—both economically and socially as well as environmentally. Both a long-term and global perspective must be made visible in education ([5], p. 10).*

These goals for entrepreneurial learning and social competence are intended to support children's learning to participate as democratic citizens in society and preschool as a start for lifelong learning.

### 2.2 Participation in Swedish preschool education

Jensen [7] calls for a need to problematize *compensation strategy* as the strategy can imply that teachers emphasize the child's shortcomings and experiences of being lacking instead of the child's competencies and opportunities. Strategic investments to increase quality in preschools are important and it is important that children's differences are taken care of and theirs in preschool are taken seriously [8, 9]. According to Jensen [7], preschool has a special function and importance for vulnerable children and their families, above all through extended care measures for the vulnerable children and extensive parental work for the vulnerable parents. Furthermore, the emotional and cognitive support that the staff can give the children in the preschool is an important aspect of quality and of vital importance to the children's ability to develop self-regulation and a belief in themselves as learners. This ability manifests itself later in life as social competence and fewer behavioral problems [10, 11]. For example, in high-quality preschools, conflicts are also used as pedagogical situations [12]. Furthermore, the report shows that preschools characterized as having medium or high-quality were characterized by preschool staff enabling the children to demonstrate their knowledge and competence and the preschool staff encouraging the children's participation and contribution. Here, the preschool staff have a dialog with the children that enables a dialogic space for sharing thoughts based on the children's initiative. Interaction between preschool staff and children is important for children's learning and development [12].

The general quality of the preschool has an indirect effect that is mediated through the children's commitment. Commitment is defined here as a match between the child's observed behavior and the demands of the situation, the demands being to perform a task, follow rules and instructions, deal with difficulties, and show self-control. Quality in preschool can be understood through the children's commitment, attention, and interest in the task, which in turn leads to an increased sense of self-competence or self-efficacy. Furthermore, interaction and interactions between preschool staff and children are most important for children's learning and development [12].

Despite the prominence of participation in educational discourse, it is often inadequately grounded in a comprehensive understanding of how to promote it through research-informed strategies. There is a tendency to adopt superficial approaches to participation without addressing the systemic and pedagogical shifts necessary to make it substantive and effective. Moreover, the concept of inclusion, frequently used interchangeably with participation, can unintentionally suggest that some individuals inherently do not belong and need to be integrated. This normative interpretation risks excluding those who do not conform to the perceived norm. Therefore, the emphasis should shift from "inclusion" as an afterthought to "participation" as a foundational principle that ensures every child is an integral member of the community. Thus, the notion of "participation" as articulated in the curriculum aligns more closely with the concept of "a school for all," rather than a school where some children are merely included.

In summary, the curriculum for preschools there are many goals. As the goals of the preschool curriculum can be considered to be somewhat vague, the knowledge

of participation in teaching has not been prominent in the debate about teaching in preschool. Therefore, there is a risk that children do not access and participate in the teaching in the preschool. This lack of participation may mean that the children do not access and take part in the knowledge that the preschool has to offer and that they are not challenged in their development. Therefore, the role of teachers and the teaching goals and practices in preschool are important for children's participation. The preschool teacher's perspective on participation in teaching, practice, and goals is important for which children have access to the teaching. Questions about what type of goals teachers set for themselves as teachers and for children, and which methods the teachers use to reach their goals, are relevant in highlighting improving children's participation in preschool. Therefore, entrepreneurial coaching should support the teachers and support the teachers' different backgrounds and the teachers' actions to improve and advance participation in preschool.

### 2.3 Entrepreneurial coaching

Entrepreneurial coaching, as an educational approach, is anchored in the theoretical framework of entrepreneurial learning developed by Seikkula-Leino and Salomaa [13]. This framework emphasizes the cultivation of entrepreneurial behaviors such as creativity, initiative, self-efficacy, risk-taking, and resilience. The EntSelf framework, which is central to this approach, comprises components such as (1) Trust and respect; (2) Everyone is special; (3) Open collaboration; (4) Toward targets and new opportunities; (5) Pleasure and competence; (6) Work life and entrepreneurship. This structure emphasizes the interplay between these components and continuous self-reflection, providing a robust theoretical foundation for several studies [14, 15].

The theoretical foundation of entrepreneurial coaching begins with the development of self-esteem through basic security, selfhood, and affiliation. The environment plays a critical role in influencing this development. As these foundational elements are strengthened ("Trust, Everyone is special, Open collaboration"), individuals develop a more specific and realistic self-concept. This, in turn, enhances goal setting ("Towards targets and new opportunities") and experiences of "Pleasure and competence." This intrinsic drive, termed "Empowering Entrepreneurship Competence," supports the development of creativity, problem-solving, risk-taking, and other entrepreneurial behaviors. As external control decreases, individuals increasingly rely on their internal motivations rather than external validation [13].

The concept of "Work life and entrepreneurship" particularly pertains to societal awareness. For young children, this could involve developing an understanding of societal roles—observing adults going to work and expressing interest in various professions such as doctor, teacher, or shop assistant. They may even consider entrepreneurial activities, such as selling berries or assisting neighbors with gardening tasks for payment.

The central premise of entrepreneurial coaching is the creation of learning environments where children are encouraged to experiment, embrace challenges, and perceive mistakes as valuable learning opportunities. This approach aligns with broader educational goals that emphasize not only academic achievement but also the development of social and emotional skills essential for lifelong success. The framework developed by Seikkula-Leino and Salomaa [13] delineates key principles such as fostering open communication, building mutual trust, and recognizing each learner's unique contributions. These principles are fundamental for creating a learning climate that nurtures the growth of entrepreneurial behaviors.

Furthermore, entrepreneurial coaching incorporates the concept of "safe failure," adapted from entrepreneurship research, which encourages children to take risks without fearing negative consequences. This approach is particularly significant in early childhood education, where the foundations for future learning and personal development are established. By promoting an environment where errors are perceived as part of the learning process, entrepreneurial coaching helps children develop resilience and a constructive approach to challenges.

The effectiveness of Seikkula-Leino and Salomaa's [13] framework has been demonstrated across various educational levels, enhancing student engagement, creativity, and problem-solving abilities [14, 16]. Borba [17] argues that the principles embedded in this coaching model can be effectively integrated into preschool education, supporting the development of critical life skills such as self-regulation, empathy, and social competence. By adopting the entrepreneurial coaching model for younger learners, educators can create nurturing environments that foster cognitive and socio-emotional growth from an early age.

Although previous research has been situated in various educational contexts, the insights are particularly relevant to preschool education, where fostering resilience and adaptability is crucial for lifelong learning. Thus, it is evident that entrepreneurial coaching is not confined to a single educational level or context; instead, it is a versatile framework that can be adapted to various learning environments, including preschools. The emphasis on empowering learners, encouraging safe experimentation, and fostering a culture of collaboration and creativity positions entrepreneurial coaching as a potent tool for early childhood educators who aim to create inclusive, dynamic, and forward-thinking learning environments that also support the enhancement of participation.

## 3. Entrepreneurial coaching in preschool education

### 3.1 A strategic framework for enhancing participation in preschools

While the concept of participation is frequently discussed in educational contexts, it is often lacking a comprehensive, research-based strategy for effective promotion. Superficial approaches to participation fail to address the necessary systemic and pedagogical changes required to foster meaningful and effective engagement. Entrepreneurial coaching, as a strategic framework, offers a robust solution for enhancing participation in preschool settings by focusing on key elements such as belongingness, availability, interaction, recognition, commitment, and autonomy. These elements are not merely abstract concepts but are operationalized through specific pedagogical practices that promote a sense of ownership and motivation among children. Seminal research by Ainsworth [18] supports this approach, highlighting that factors like sensitivity to children's signals, initiation of interaction, and adaptable environments are crucial in developing secure attachments, which, in turn, foster active participation.

### 3.2 Cultivating lifelong learning through entrepreneurial coaching

The primary goal of entrepreneurial coaching is to instill a lifelong passion for learning in children. This is achieved by creating an environment where mistakes are viewed as opportunities for growth, and where each child's unique characteristics

are acknowledged and valued. As noted by Seikkula-Leino and Salomaa [13], the entrepreneurial mindset aligns naturally with lifelong learning principles, emphasizing goal-oriented actions, opportunity-focused thinking, and a drive for success. This entrepreneurial culture supports a holistic approach to lifelong learning, where children are encouraged to explore, take intellectual risks, and reflect on their experiences as part of a continuous learning process. Such an environment is essential in establishing a strong foundation for a child's future educational journey and personal growth.

### 3.3 Building inclusive and safe learning environments

A fundamental objective of entrepreneurial coaching is to create inclusive and safe learning environments that cater to the diverse needs of all children, ensuring equitable participation. This approach is aligned with the broader goals of inclusive education as outlined in the Salamanca Declaration [1], which advocates for accommodating the varied abilities and needs of all learners. Entrepreneurial coaching aids educators in structuring their classrooms in ways that encourage every child's development and active participation, thereby promoting equity in education. This strategy not only emphasizes academic inclusivity but also prioritizes social and emotional safety, allowing children to express themselves without fear of exclusion or failure.

## 4. Practical implementation of entrepreneurial coaching

### 4.1 Strategies and tools for teachers

For entrepreneurial coaching to be effectively implemented in preschool settings, educators require practical strategies and tools. These include fostering essential social skills such as empathy, cooperation, and assertiveness, which are critical for active participation [19]. Moreover, the six components outlined earlier (Trust and respect, everyone is special, Open collaboration, Toward targets and new opportunities, Pleasure and competence, Work life, and entrepreneurship) provide a research-backed framework that can be used to develop strategies and tools. The design of the learning environment is also crucial; educators need to create spaces that encourage risk-taking and creativity, allowing children to express their ideas freely and take the initiative in their learning processes. This focus should guide the development of strategies and tools for practical implementation.

### 4.2 Integrating entrepreneurial coaching principles in Swedish preschools: Observations and opportunities

Several Swedish municipalities have practices that align with the principles of entrepreneurial coaching in preschool settings. For example, some municipalities employ itinerant preschool teachers and development educators to ensure that all children have access to high-quality education. These initiatives have successfully promoted participation and reduced inequalities within preschool education [12]. However, these efforts are not always explicitly framed within the concept of entrepreneurial coaching. Our observations suggest that a more deliberate and informed application of these principles could further enhance a culture of active and experiential learning. By consciously integrating entrepreneurial coaching into early childhood education, children could have more opportunities to learn through

experimentation, helping them develop stronger foundations for self-esteem and self-regulation skills, which are essential aspects of entrepreneurial behavior. This integration could significantly enhance opportunities for fostering meaningful participation and engagement among young learners. To succeed in this, requires conscious teachers and staff who are given time to reflect on their practice against different theories about children's development and learning.

## 5. Challenges and opportunities

### 5.1 Potential barriers to implementation

Despite its potential advantages, the implementation of entrepreneurial coaching in preschools is not without challenges. These may include resistance to change among educators, as the concept of entrepreneurial coaching is often mistakenly associated solely with business entrepreneurship. Other challenges include limited resources and the need for continuous professional development. Addressing these barriers will require coordinated efforts from policymakers, educational leaders, and the broader community.

### 5.2 Future directions and research opportunities

Future research should continue to explore the long-term impacts of entrepreneurial coaching on children's development and participation across diverse educational contexts. Drawing on Seikkula-Leino and Salomaa's [20] theoretical framework, there is significant potential to investigate how entrepreneurial coaching can be tailored and expanded within early childhood education to meet the diverse needs of young learners. Seikkula-Leino and Salomaa [20] assert that entrepreneurial coaching, when adapted appropriately, has the potential to instill foundational skills that are vital not only in education but also in life. This includes fostering resilience, creativity, and social-emotional learning in early childhood settings. Further research could explore the specific mechanisms by which these skills can be nurtured in young children through targeted coaching strategies. Additionally, there is a need to study the scalability of this approach in diverse educational environments, from urban to rural settings, across different countries, and its effectiveness in bridging educational disparities.

Future research could also focus on developing specific pedagogical tools and assessment methods that align with entrepreneurial coaching principles, ensuring that educators can effectively implement and measure the impact of this approach on student outcomes. The integration of entrepreneurial coaching into early childhood education could ultimately contribute to a more holistic educational model that prepares children not just academically but as adaptable, resilient, and innovative individuals. The development of assessment tools can benefit from studies utilizing Seikkula-Leino's framework [14, 20].

## 6. Conclusion

### 6.1 Summary of key findings

Entrepreneurial coaching has the potential to transform preschool education by enhancing participation, promoting lifelong learning, and creating inclusive learning

environments. While some principles of entrepreneurial coaching are already in use in places like Sweden, a more explicit and informed application of these concepts could significantly benefit preschool education. Emphasizing a culture of experimentation and experiential learning, such as one that allows learning from mistakes, could be a step toward strengthening children's equitable participation in education and learning situations.

### 6.2 Implications for policy and practice

To fully realize the benefits of entrepreneurial coaching, policymakers should consider incorporating this approach into national curricula and teacher training programs. Emphasizing its principles more consciously in educational settings could help strengthen early childhood education practices. Such initiatives would help to ensure that preschool education is inclusive, equitable, and effective in fostering lifelong learning and eliminating educational discrimination, aligning with Sustainable Development Goal 4 (Quality Education).

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Chapter 7

# Pathways of Hope, Breaking Barriers: Refugee and Immigrant Women Leading Change in Early Childhood Workforce

*Deborah Young, Lauren Dorn and Irina Karic*

## Abstract

The Pamoja Workforce Project, a partnership between Empowering Communities Globally: For the Care of Children and Lutheran Family Services Rocky Mountain. The Project seeks to identify and address barriers, gaps, systemic biases, and discrimination faced by refugees and immigrants non-English non-Spanish first language speakers, entering higher education in the early childhood field. By leveraging a participatory approach, the project collaborates with community members to identify and understand the unique challenges they encounter. This involves a thorough analysis of systemic barriers and biases that hinder access to educational opportunities and workforce integration. For four years, the project has tackled barriers and improved each semester with student-led changes. We have addressed obstacles including policy advocacy, professional development, and community engagement, working to dismantle discriminatory practices and foster inclusive systems for equitable higher education access. The Pamoja Workforce Project provides targeted resources and support for refugees and immigrants, offering essential tools and guidance for retention and completion of certificates and degrees. The approaches include language justice, career navigators, homework support, childcare, emotional wraparound services, and digital literacy. These efforts aim to create a more inclusive holistic educational environment where everyone can thrive and make meaningful contributions to their fields.

**Keywords:** refugee and immigrants, higher education, comprehensive, multilingual, multicultural, workforce

## 1. Introduction

In the United States, where tens of thousands of refugees are admitted annually [1, 2], the growing refugee and immigrant population underscores the need for targeted educational resources and support systems tailored to their needs. Accessing higher education remains a formidable challenge for the newcomer populations, as institutions are often inadequately equipped to provide the comprehensive support

required for successful navigation and matriculation. Many students attempting to enter higher education encounter disorientation and frustration due to obstacles in a system not designed to effectively support them. Participants in the Pamoja Workforce Project have identified several barriers to educational accessibility that reflect these systemic challenges [3].

Language access remains a significant barrier for many students. While colleges and universities may provide language services, these are often limited or available only in Spanish, leaving non-Spanish-non-English (NE-NS) first language student candidates struggling to navigate the college onboarding process. Additionally, essential documents and websites are frequently only available in English and Spanish, exacerbating the difficulties. Language challenges are further intensified by experiences of discrimination and unwelcoming environments, which impede newcomers' ability to navigate and advocate for themselves. Classes are often conducted solely in English without additional language support, and the requirement for proof of English proficiency can delay or obstruct access to education for newcomers until their language skills meet the required standards [4]. Without interpreter services, navigating administrative tasks such as applications, FAFSA, and class registration frequent miscommunications when trying to meet institutional requirements is a frequent experience for the student and college staff. The complex bureaucracy involved in financial aid and course registration can be particularly overwhelming for those unfamiliar with the system. Additionally, many refugees and immigrants lack high school diplomas from their home countries due to fleeing violence at a moment's notice. Students with advanced degrees report their struggle to understand their qualifications' relevance in the U.S. and may be deterred by the high costs of degree evaluations [5]. The significant expense of higher education in the U.S. further compounds these challenges, imposing a substantial financial burden on newcomers [6, 7].

Community-based organizations play an important role in supporting diverse newcomer students by bridging cultural differences and navigating complex administrative processes [8]. Community-based organizations' understanding of historical, linguistic, and cultural contexts allows them to effectively convey program information and engage community members. Community-based organizations fill in gaps and address barriers that higher education institutions, due to systemic bias, do not yet have the resources, human and material, to support newcomer students. Effective partnerships and coordination between community-based organizations and higher education institutions are essential for reaching newcomer communities. It is advisable such partnerships be grounded in strong communication, timely information sharing, collaborative planning, and a focus on shared vision and outcomes [9].

Language facilitates the transmission of information and knowledge within diverse sociocultural, political, and economic contexts. Individuals are entitled to express themselves in their chosen language both online and in public spaces, as affirmed by international human rights instruments such as the Universal Declaration of Human Rights and the UNESCO Recommendation on the Promotion and Use of Multilingualism and Access to Cyberspace [10].

Cultural responsiveness is a learned skill and plays an essential role in supporting diverse students in navigating the college system [11, 12]. Cultural responsiveness for newcomer populations by institutions of higher education is typically limited, even with increasing diverse student demographics. Students who are not dominant language speakers can easily feel unheard and unseen in the process of accessing higher education. While international student offices are generally well-prepared to

support students from around the world with administrative and logistical needs, these services often do not extend to refugees and immigrants.

Cultural bridging requires a holistic, coordinated approach from diverse stakeholders at the systems and community levels to address the varied needs of refugees and immigrants. Refugees and immigrants often face significant isolation and struggle with social and cultural adjustment, and many suffer from long term trauma [13]. Effective adjustment and long-term well-being depend on navigating, keeping, and accepting different cultures and languages. Host communities will need to engage with and learn about new cultures, enhancing community pluralism. Those working in higher education can better develop supportive learning environments and develop equitable policies that facilitate coordinated, culturally and linguistically responsive services when they understand trauma responses [14].

As seen throughout the refugee and immigrant newcomer community, the women entering Pamoja Workforce Project's digital literacy is typically low and at times nonexistent. This is common among newcomers to Colorado as access to computers and tech knowledge is limited in their home community. Learning digital skills is needed to be successful in college. Institutions of higher education use online ways from applying to attending class, creating a barrier for newcomer students [15]. Without adequate educational opportunities, refugee and immigrant populations experience significant barriers to securing stable, well-paying jobs, thus remaining trapped in cycles of economic hardship. Our Pamoja Workforce Project approach recognizes the complex interplay between social, economic, and environmental factors that influence retention and completion.

Transitioning to employment following the attainment of a college certification necessitates targeted resources and support for newcomers. The processes of constructing resumes, drafting cover letters, completing job applications, and conducting interviews in English and according to the host country's norms present significant challenges. Community-based organizations can play a connecting role by providing guidance and facilitating networking opportunities with employers and refugee and immigrant community members [16, 17]. Refugees and immigrants are seldom found in leadership positions within host communities. Enhancing their representation in governance structures can lead to more equitable processes and policies. Such leadership roles provide inspiration and hope and leverage the talents of newcomers. Inclusive leadership approaches can address community-driven issues and foster sustainable, self-directed progress need citation [18].

Newcomer refugee and immigrant families often face economic hardships that limit their access to essential services, including education, medical care, employment, and childcare, and many cannot afford public transportation costs. Transportation and childcare barriers hinder their ability to attend in-person college classes and in-person required processes, exacerbating social and economic isolation. For refugee and immigrant women, the ability to travel is complex; many have never driven in their home countries due to cultural norms or infrastructure limitations. Obtaining a driver's license is further complicated by language access issues, as tests in Colorado are typically in English or Spanish, not accessible to emerging English learners whose native languages are Dari, Farsi, or Pashto [19]. Additionally, without personal vehicles, students must rely on public transportation, which involves navigating complex bus routes or facing the high costs of alternative options like taxis. These challenges are intensified by language barriers, cultural differences, and discrimination.

Access to adequate and quality childcare is crucial for the education, employment, and stability of refugee and immigrant families [20]. Without reliable and culturally

responsive childcare options, parents may struggle to balance work and caregiving, undermining their employment stability and community integration. For women, childcare is essential for participating in career pathway education. The Pamoja Workforce Project addresses this need by providing childcare and transportation for in-person classes and meetings, contributing to a 98% retention and completion rate.

## 2. Rationale

The Pamoja Early Workforce Project aims to identify and address gaps and barriers in higher education pathways, seeking effective solutions to these challenges.

### 2.1 Language

Language justice is a fundamental human right. This phenomenon, known as language attrition, can be detrimental as it risks erasing crucial cultural and emotional connections tied to their primary or heart language. When children disconnect from their primary/first language, they may experience reduced cognitive and emotional development, alongside a disrupted sense of identity and belonging. It is essential that higher education institutions provide content in multiple languages to ensure the development of an integrated and skilled workforce. Pamoja Workforce Project approach to higher education for refugees and immigrants, supported by comprehensive wraparound services, is distinctive within the national higher education landscape. While bilingual programs in Spanish and related services are available across various institutions of higher education, there remains a notable gap in providing instruction in other languages [21]. In the United States refugee and immigrant populations are the fastest-growing group entering higher education [22]. College programs for refugees and immigrants often emphasize English proficiency as a prerequisite for college readiness. In contrast, the Pamoja Workforce Project allows students to begin their college education without requiring English proficiency or passing an ESL placement test. The program supports students in their preferred languages throughout their college experience and collaborates with faculty to use interpreters in the classroom. This approach, which accommodates over ten languages, significantly enhances accessibility for refugee and immigrant students who might otherwise face barriers to higher education [23, 24].

Additionally, Pamoja staff train faculty, employers, and early childhood organizations in cultural and linguistic humility, responsive practices, and anti-bias measures, including language justice. The presence of equity and inclusion champions at partnering institutions is crucial. Pamoja's collaboration has led to invitations for students and staff to contribute to local and state committees, amplifying diverse voices in early childhood and workforce issues. On a national level, the project participates in focus groups on early childhood workforce programs, home visiting, family childcare, fatherhood initiatives, universal preschool rollout, and equity discussions, and it has presented at national and international conferences [25].

### 2.2 Cohort model

There has been a significant rise in cohort models offered by universities to increase student enrollment, ease administrative management time, and increase

success, and retention [25, 26]. Research suggests the benefits of cohort model programs to motivate adult learners to finish requirements of the program and graduate [27–35]. A cohort group is recognized as being a unique and interdependent group. Wenzlaff and Wieseman [36] state that there are three primary types of cohort structures: closed, open, and fluid. A closed cohort is what the Pamoja Workforce Project uses; it is a fixed group of students who have been chosen to take all their classes together in a sequence that has been planned [37]. Instructors have favored the cohort approach over the conventional education paradigm with a more fluid system. Cohort instructors have an easier time advising students because they are all in the same area at the same time. Students have reported that professors more easily support cohort students since the students work together and support each other in meetings and classes. Research has shown that relationships between students in cohorts influence retention and completion of degree programs. In addition, cohorts provide a convenient way for teachers and Pamoja staff to schedule classes. Students report working together as a cohort in their classes has developed a social network strengthening protective factors. Working as a cohort provides them with a sense of safety and belonging as they enter the unfamiliar world of college classes. Pamoja Workforce Project infuses cohorts into its design from onboarding of students, to creating classes, and training. Ninety-eight percent of Pamoja students report feeling comfortable with the women in their cohort and that the women support one another. Pamoja Workforce Program, LFSRM/ECG. Pamoja Pre/Post Survey [38]. A participant stated, "I get a lot of benefits from my cohort, such as sharing thoughts and opinions. We have many family needs, and we encourage each other to continue and overcome any barriers. All our people in the cohort have children, work, and study. We try to choose times for meetings that work for everyone. As much as there are benefits, there are also some challenges to working with other students as a group. Sometimes there are people who would like to depend on others to help them a lot. I feel the cohort model is very helpful in the study, and it depends on the nature of the people who are in the cohort" [39].

### 2.3 Learning communities

Learning communities are part of our cohort model. Learning communities are used in the class for students to work together on learning tasks and homework activities. The relationships built during the learning community deepens and so does the learning. As one participant stated, "We help each other as a group in the study by spending time reading together, working on the assignments as a group, and learning community submission. Many times, we speak in Arabic, our first language. We are so happy we have the chance to work together. It is interesting and not boring. It saves time, instead of doing everything from a to z all by myself, I work in a group. Everyone takes part. Then we all share what we worked on and explain it to the whole group" [40]. Learning communities can provide space to build confidence in navigating the processes of the college. Most colleges and universities mandate individual sessions with academic and financial counseling as part of the admissions process. Many refugee and immigrant students come from more collectivist cultures, whereas the United States operates within a more individualistic framework [41]. To mitigate, allowing small group meetings can be less intimidating compared to one-on-one sessions [42]. A deeper examination of collectivist norms from students' home countries could offer valuable insights into adapting systems to better support these students.

The effectiveness of learning communities in supporting refugee and immigrant students is well-documented. Baker et al. [43] highlight that structured learning communities improve academic outcomes and retention rates by providing targeted support and fostering a sense of belonging among students from diverse backgrounds. Similarly, Reddy et al. [44] emphasize that such communities enhance educational experiences for refugee and immigrant students by creating inclusive environments that address their specific needs and facilitate their integration into the higher education system [42, 43]. Learning communities in higher education significantly enhance students' engagement with course content, facilitate the completion of assignments, and foster essential social connections, all of which are crucial for retention and academic success [45–51].

### 2.4 Homework support

Each Pamoja Workforce Project college course consists of a dedicated homework support person and session to assist students with academic assignments within their learning communities [52, 53]. The homework navigator collaborates with the instructor to understand the material and assignment, in addition they attend monthly meetings with Pamoja staff to track student progress. Online homework sessions use interpreters and multiple breakout rooms. Research indicates that refugee and immigrant students often face challenges with vocabulary, content comprehension, and communication. Pamoja homework sessions help build their confidence and completion of homework in a timely manner [54, 55]. An ECG survey conducted in February 2024 revealed that 75% of Pamoja participants found homework support to be the most beneficial form of assistance, valuing navigators and interpreters as mentors who aid in understanding and applying coursework.

### 2.5 The classroom

The success of the Pamoja Workforce Project hinges on effective language access [52]. Each semester, interpreters facilitate learning in students' preferred languages across 8–12 courses. These classes are hybrid, combining online, virtual, and in-person formats, and include both college-provided and local organization-supported English classes for refugees and immigrants. For non-English speakers, interpreters are crucial in enabling full engagement with course content and ensuring equal educational quality. This support is beneficial for students aiming to become qualified educators, as it enhances their ability to teach effectively and with quality [54–56].

Faculty face challenges when teaching students who speak multiple languages, including ensuring content comprehension despite varying English proficiency levels, finding meaningful and relevant readings in first languages, and developing equitable assessment methods so students can show what they have learned. Traditional written assessments, such as essays and standardized tests, often do not highlight refugee and immigrant learning. To address this, Pamoja course faculty incorporates video implementation, multilingual slide decks, observation, and translated quizzes into its assessments. Ensuring that educational content is meaningful and relevant requires a shift in thinking for faculty and additional time to learn about their student's historical and linguistic backgrounds. Additionally, the lack of academic resources in non-English languages poses a challenge. A state or national repository of articles in multiple languages could greatly support both faculty and students [57].

### 2.6 Pamoja workforce project: An overview

The idea for the Pamoja Early Child and Family Program emerged from several focus groups held with 50 participants who were from the refugee and immigrant community who are NE-NS first language speakers in August 2019 [58]. Early Milestones Colorado sided with the Office of Early Childhood in collecting data for the needs assessment for the Preschool Development Grant. Nearly 6000 Coloradans lent their voices to inform Colorado Shines Brighter, including over 5000 parents and caregivers of children under five. Others included directors, teachers and professionals in the early childhood field [59]. During a presentation to organizations providing home visits, the data collection process was shared by the Executive Director of Early Milestones. She shared that the needs assessment surveys and focus groups were conducted online, available in English and Spanish languages. While attending the presentation, Empowering Communities Globally: For the Care of Children (ECG) executive director asked if voices were collected from refugee and immigrant NE-NS first language speakers. The answer was "not that they knew of, I am curious about this question, how about we meet for coffee?" Dr. Young from ECG called Lutheran Family Services Rocky Mountain (LFSRM), the largest resettlement agency in Colorado, and talked with Lauren Dorn about the possibility of gathering people from the refugee and immigrant community who have children under five for in-person focus groups. Together Dr. Young and Ms. Dorn worked with Early Milestones Colorado to hold several focus groups during the following 10 days, to meet the deadline for data collection. The majority of the participants came from communities deeply affected by historical and ongoing injustices ranging from state violence and transgenerational trauma to systemic discrimination. Their stories revealed a clear and pressing consideration, while there are many programs designed to address their needs, the programs are limited and often provide only superficial solutions that fail to tackle the root causes of the barriers faced by these communities [60].

Dr. Young and Ms. Dorn followed up with the moms who had participated in the focus groups and held several listening sessions with them over a course of two months. The women came from Afghanistan, Democratic Republic of the Congo, MENA countries, and Myanmar. The heart of the issues lies in what can be described as childcare deserts, areas where access to quality prenatal and ECCDE services is severely limited or non-existent. These deserts are not only geographical they are also symptomatic of deeper, structural inequities. The disparities in access are a direct result of policies and practices that are historically entrenched in dominant bias; policies shaped by long standing inequities and discrimination, which created a system where access to culturally and linguistically relevant high-quality care is not accessible or available. It was during the listening sessions that ECG and LFSRM created a partnership and started the Pamoja Program. The Pamoja Program continued to identify and find ways to address fundamental barriers, gaps, concerns and successes keeping in mind to go deeper than surface-level solutions. The Pamoja Program staff recognized that the lack of quality prenatal and ECCDE support is a matter of insufficient resources and a reflection of deeper social injustices and inequalities the refugee and immigrant communities face [61].

Dr. Young and Ms. Dorn continued to meet informally through December 2019 with 18 interested moms from Afghanistan. During the discussion, ECE workforce pathways were introduced. Unanimously, the women chose to take a college certification leading to a degree pathway rather than professional development workshops. To introduce the topic of early childhood, Dr. Young provided a series on the 7-module

Zero to Three Growing Brain workshop [62]. Three of the topics, brain development, stress and the brain, and the importance of play, were significantly relevant and meaningful to the women. The women had fled a conflict area and were eager to understand the impact of stress on the brain for themselves and their children. Understanding the impact of stress gave the women a new perspective on themselves as a parent and how to parent and guide their children. Reportedly, the women stated that in Afghanistan, culturally, their children engage more with their peers in play than with their parents or other adults. Playing with their children was uncommon. An important note, in the U.S., there is an emphasis on parents and adults actively engaging in play with their children, and in the ECE field, teachers are trained to interact with children through play to support children's learning. This realization of cultural differences in play was an eye-opening moment for everyone involved.

The Pamoja Program has since expanded from its initial focus as an Early Childhood Workforce Project to now include several additional initiatives: the Fatherhood Project, the Family, Friend, and Neighbor Project, the Home Visitation Project, the Advocacy Project, and the Leadership Project. The Pamoja Program tackles root causes of disparities by collaborating with state departments and other organizations to dismantle biased policies and practices. This effort aims to build systems that are inclusive and foster a sense of belonging for all individuals. The Pamoja Program uses Empowering Communities' 5-Step model [63] that has been used internationally for over three decades and is designed with a holistic (head, heart, mind) and comprehensive (wrap around services) focus.

## 3. Methodology

### 3.1 Mixed method approach

The Pamoja Workforce Project uses a mixed-method approach for oversight and evaluation, integrating both quantitative and qualitative data and feedback from the participatory assessments from every semester. Pamoja staff routinely collects, stores, analyzes, and reports program data to funders, which is essential for assessing progress, identifying trends, and evaluating the effectiveness of the program. The major epistemological stances and theoretical perspectives that have shaped this study suggest a methodology using critical inquiry and feminist postmodem participatory action research for the collection and analysis of data. The methodology of participatory action research (PAR) has gained impact and recognition from the established social science [64–67]. The PAR framework proposes community members to actively engage in design, implementation, and evaluation to address the issues around childcare in their community. The PAR framework brings together and establishes ties among community members who might normally have little contact with each other or the topic under investigation. Local members identify assets within their community and together propose solutions for the concerns they identify [68]. PAR respects the intelligence, values, ideas, and experience of participants rather than superimposing outside ideas or social structure that has been created to reinforce the inequities set up by colonial foundations of society where trust between government and individuals and/or communities have broken. The PAR framework aims to raise awareness of problems and build networks to create inclusive organizational practices. It fosters a shared understanding of how inequalities, hidden biases, and entrenched practices have contributed to the issues being addressed. The project involves reflection on how

bias manifests, an intellectual exploration of how structural biases affect access to prenatal and early childhood education, and an emotional commitment to addressing these challenges. The research process involves multiple cycles of participatory reflection, data analysis, and practice adaptation. Each cycle starts with reflecting on actions taken, followed by analyzing collected data, which informs adjustments to the project. These adjustments then become the focus of the next cycle of reflection and analysis. Participants continuously absorb new information, altering their thinking and actions based on their experiences with the project. This often leads to immediate changes in project-related activities, which are then subject to further reflection and group discussion. Change is ongoing throughout the research, with the project evolving and adapting over time, sometimes in unexpected ways.

The ongoing monitoring and evaluation of the Pamoja Workforce Project provides critical information for decision-making, informing target populations, project staff, and stakeholders about the Pamoja Program's impact. The insights gained helped to improve outcomes, manage costs, and make timely adjustments based on the project's logical model. This approach facilitated informed decision-making, ensuring the program's alignment with its goals and enhancing overall effectiveness. Formative and summative assessments are both utilized in the evaluation process. Summative assessments are conducted from June to the following May of a school year or at the end of a funding cycle. These assessments measure and communicate performance to ensure quality and accountability.

### 3.2 Target population

This study focuses on refugee and immigrant students who are women and are interested in entering a structured path to work in the early childhood field through higher education. The sampling includes students in the upcoming cohort and the Pamoja Workforce Project's enrolled students. The sample of students joined the program at various stages from the spring semester 2020. In the initial semester of the program, there were 18 students. The following semester saw an increase of 30 new students entering the program. Each subsequent semester continued this trend, adding 30 new students per semester. Currently, the program includes 112 students who are actively pursuing their college education across five cohorts. In total, the Pamoja Program has supported 280 students throughout its duration. The students and Pamoja staff provide data for analyzing the impact of the Pamoja Program, on student success and development, and barriers and gaps that may emerge. The ages of the students ranged from 22 to 62 with a mean age group of 30–39 years of age.

### 3.3 Data collection

A practical approach to initiating a PAR project is to start by collecting initial data on general concerns, followed by reflection and planning for change. For the Pamoja Workforce Project, the staff first gathered diagnostic data to identify needs within the targeted community. Once the project was underway, additional data was collected on its implementation. Dr. Young and Ms. Dorn met with the first cohort multiple times to reflect on and analyze the data, which led to refined plans and adaptations within the project's implementation for future cohorts. Some of the guiding questions that were used in the analysis of the data were: What has been achieved? How do we know that the project was a significant contributing factor to the results? Are the objectives being met? Is the project doing what the plans said it

would do? How is the project well managed? Where does the project need improvement and how can it be done? Are the original objectives still appropriate? What difference has the project made? Can the impact be improved? How can we help to prevent similar mistakes or to encourage positive approaches? These questions continue throughout the project today.

Data collected includes the record keeping of descriptions of what was happening in respect to the essential guiding questions being investigated, the life circumstances of the participants and the investigative process itself. In addition, records of Pamoja staff judgments, reactions, and impressions about what was going on were also collected and reflected with some of the participants who were bilingual and supported Dr. Young's and Ms. Dorn's cultural understanding.

The validation of the data was achieved by triangulation of observations and interpretations, triangulation of field notes, surveys, participant confirmation during focus groups, by pre and post surveys given during classes, and notes from home visits with Pamoja staff and students participating in the home visiting program. The data was used for understanding impact and ways to create change. The tools for data collection included note taking, photos, surveys, interviews, focus groups, recordings of classes, and video. Data collection was planned with a commitment from the Pamoja staff, students, and other key players such as college staff. Students signed agreements at the onset of each semester to participate in the surveys, interviews, and focus groups throughout the semester. Recordings and videos were used with consent from students during class. If a student did not want to be recorded or video, their camera was turned off and their screen name changed.

A schedule with deadlines and descriptions of responsibilities related to information collection, analysis and presentation sensitized Pamoja participants about the need for timeliness and accuracy. Guidelines were developed to help standardize how to collect and analyze information. Lastly, triangulated information sources and methods of collection were used, that is, we used three data points/sources for the same data item. Processes were transparent, with students and staff kept informed through the same WhatsApp groups. Meetings or discussions with key players typically included at least two staff members and a minimum of two students, depending on availability. The number of students available could vary from as few as two to as many as twenty-two. Pamoja students were also involved in drawing conclusions and reflecting on the data with Pamoja staff. For NE-NS speaking students, Pamoja staff use interpreters to ensure their voices are heard, whenever interpreters are available.

### 3.4 Needs assessment

Before each semester commences, both qualitative and quantitative demographic data are gathered. This data collection informs the development of Pamoja's core training Upskill Reskill curriculum for new cohorts entering the program. The core program has transformed each semester based on reflections and insights from previous cohorts. Bringing the voices of the students to the forefront involves overcoming institutional, professional, and personal challenges, necessitating significant shifts in how Pamoja staff think and act. These shifts include questioning established concepts and realities, exploring and adopting new paradigms, embracing a new form of professionalism, and empowering students to analyze and articulate their own experiences. This approach prioritizes decentralization, local diversity, complexity, and empowerment, emphasizing the importance of reversing traditional hierarchies and placing local realities at the center of the research. This process requires those

in positions of power, Pamoja staff, to step down, sit, listen, and learn. By doing so, Pamoja staff address the complex consequences faced by people living in underserved and vulnerated refugee and immigrant communities and shift the attitudes of influential individuals. The assessment process starts each semester with diagnostic data collection through small group meetings and a large orientation with current students. This data identifies areas needing intervention and guides the program's ongoing development. Formative diagnostic assessments are conducted periodically throughout the project's lifecycle, summative at the end of funding cycles, to ensure accountability and assess effectiveness.

In the Pamoja Workforce Project, staff employ a range of indicators to assess whether the changes we aim for have been realized over a nine-month period while students are engaged in their college courses. Direct indicators offer clear, specific measures of progress. For instance, staff track student attendance in both their regular classes and homework support sessions, monitor their grades, and record their participation in in-person days. For those involved in childcare centers, staff observe the implementation of new practices. These metrics help staff gauge whether the students are meeting the project's targets and provide a concrete standard for evaluating the project's success. Indirect indicators provide a broader perspective on the project's impact. Staff looks at changes in student completion rates, such as the number of certificates and degrees earned. Shifts in attendance patterns can indicate community barriers or support. Additionally, staff assess whether students are increasingly utilizing services beyond the Pamoja Workforce Project and becoming more engaged in community or workforce activities, especially important as many students enter the program experiencing social isolation.

Further, staff evaluate the changes in conversations and attitudes regarding systemic bias during state and outreach events, reflecting deeper societal impacts. Finally, economic indicators are considered, such as changes in family finances, to understand the broader financial impact of the project on the families involved. Utilizing existing community resources and local traditions have effectively helped staff to become culturally responsive and develop more appropriate avenues for enhancing the educational system [69–71]. (Collaborating with people from the target population informed the researchers on how to best serve the students in a more comprehensible, credible, affordable, and accessible form and helped the Pamoja team bring forward the voice of students in the program.

### 3.5 Limitations

Potential limitations of the study could be the collection of excessive and non-specific information that can be too overwhelming to ever be used. Collecting data related to a single point in time, for example during a specific semester, is also a limitation in that the data could look differently during different times in the school year. A further limitation is that Dr. Young or Ms. Dorn are not native speakers or members of the communities of the students which limits entry and understanding as a member of the community.

### 3.6 Findings

During the first cohort, all courses had a 100% attendance and 100% completion rate for Level I Early Childhood Education certificate for Assistant Teacher. The following semester 16, or 88%, of the students progressed to the to complete the

coursework for the Level II Lead Teacher certification, the other two students moved to a different state. In the first cohort students had higher education experience, ten students had high school experience, and two students never attended any formal schooling. The 16 students continued to take required courses through to the completion of the Director's certificate. To date, with six cohorts having participated in the program, Pamoja has maintained a 98% retention and completion rate each semester. After the completion of our first cohort, Early Milestones Colorado provided us funding to expand our program to include Arabic, Burmese, Karen, Kinyarwanda, and Swahili languages. As the program evolves, we have continued to serve additional languages, including Omoro, Tigrinya, Somali, and Chin.

The following subsections highlight key research findings. Our findings indicate that participants report positive influences to tackle social determinants of health and wellbeing by increasing protective factors, including economic health, education access, healthcare access, knowledge of child development, knowledge of emotional wellbeing, and social connections. The wellbeing and protective factors are especially relevant for refugee and immigrant families due to their historical context and social isolation. Our comprehensive wrap-around services address the complex, interconnected barriers faced by these communities. By tackling these challenges simultaneously, we can better promote stability, resilience, and quality of life for these populations.

### 3.7 Providing academic navigation and language justice

The Pamoja Workforce Project developed college guides using screenshots and videos in several languages. The guides provide a step-by-step walkthrough of the college enrollment process from applying to the college, creating an FSA ID, resetting a college log in, registering for classes, and navigating the college student portal. Additionally, the Pamoja Workforce Project developed an onboarding program known as "Upskilling Reskilling" to prepare students for their academic journey. The Upskilling Reskilling program spans four months prior to the start of the student's first semester of classes and includes but is not limited to workshops on digital literacy, FAFSA and financial applications, how to use Google drives/docs/spreadsheets, how to upload and download, find assignments and how to access course discussions and grading. Workshops on Zoom and utilizing interpretation channels, and how to support the process of language justice are also included. During the Upskill Reskill period, students are introduced to the Growing Brain Zero to Three series comprising seven modules, providing students and their learning communities with opportunities to access the college course shell, upload assignments, collaborate on homework, understand instructor feedback, and develop their online skills [72].

As with all Pamoja sessions, the college orientation sessions are conducted with interpreters and are complemented by tutorials in students' preferred languages. When students participate in FAFSA workshops offered by the Community College of Denver and receive assistance from the TRIO program [72], the Pamoja Workforce Project supplies interpreters and cultural navigators. The Pamoja Workforce Project supports students needing to continue English Language learning through various options, including EnGen English classes [73].

The adoption of a group messaging platform emerged as a preferred method of communication among the women. This group messaging reinforces the cohort and learning community model facilitating peer support, where students assist one another by addressing questions and sharing insights as they navigate through the

semester. It is also a place where PamojaWorkforce Project staff provide support and urgent messages. WhatsApp, a widely used communication tool among refugees and immigrants, proved to be the preferred choice due to familiarity.

### 3.8 Increased coordination

Strong partnerships with academic institutions can facilitate the institutionalization of inclusive higher education systems that are responsive to the unique barriers faced by refugees. These communication barriers often exacerbate difficulties, sometimes resulting in students dropping classes after being mistakenly informed that immediate payment was required, when in fact they had additional time but did not understand the instructions. In one instance, at a local community college, a student sought to resolve an issue with a Change of Study Form. Although the form had already been submitted and was listed as pending in the student's account, the student, concerned about the status, visited the school multiple times to seek clarification. Rather than informing the student that the form was pending and that they simply needed to wait, the student was told, "we do not have the facilities to help you." This response failed to address the student's concern and also underscored the lack of adequate support for non-native English speakers navigating the college's administrative processes.

Pamoja program navigators intervene by providing support in students' first languages, supporting them to understand the emails and notifications they receive. Pamoja leadership regularly meets with higher education administrators to discuss the barriers that students face and to advocate for the adoption of a cohort model, learning communities, and the provision of interpreters to enhance the effectiveness and success of these institutions. It has become increasingly evident that higher education institutions lack the necessary infrastructure and mindset to address the unique needs of refugee and immigrant learners, frequently shifting the responsibility to respond to the Pamoja Workforce Project staff.

Pamoja continues to collaborate with community colleges and are actively seeking to expand partnerships with additional academic institutions. Each semester, Pamoja offers classes in students' first languages to approximately 100 individuals, and currently has a waiting list of over 250. The Pamoja Workforce Project supports faculty by providing instruction and resources for integrating interpreters into their classrooms and promotes the development of cultural humility and responsive pedagogy. Program efforts extend to university graduate programs as well, supporting students who have earned degrees from their home countries. The Pamoja Workforce Project assists students in evaluating international transcripts and advocates for students who have fled their countries due to violence and are unable to access their records by negotiating with the college or university. Pamoja has established a partnership with the University of Colorado Colorado Springs to support their graduate programs in Early Childhood Special Education and Teacher Licensure. To date, 11 students have graduated from these programs, and a cohort of 12 students currently matriculated is supported with wrap-around services.

Pamoja's instructional model is scaffolded, offering extensive support during the first semester to facilitate student success. The onboarding process is comprehensive, encompassing four months of upskilling and reskilling training. During this initial phase, program navigators provide both individual and group support, ensuring that no student is overlooked. As students advance into the second semester, they gradually become more self-sufficient, although navigators remain available for ongoing

assistance. With the program currently serving over 100 students per semester, Pamoja recognizes the necessity of developing a more effective strategy that holistically supports refugee and immigrant students. Establishing partnerships between government entities and community-based organizations is imperative to ensuring that these students receive the support they need.

### 3.9 Cultural responsiveness

Cultural responsiveness has proven essential for effectively working with refugee and immigrant populations and is a core component of the Pamoja ECE Workforce's approach. Pamoja Workforce Project's process of cultural responsiveness includes continuous feedback loops through ongoing listening sessions, interviews, and focus groups, which identify areas for improvement and emerging concerns [12]. As a result, Pamoja provides classes scheduled in the evening, times preferred by students, typically between 7:00–9:00 PM. Pamoja ECE Workforce enables students to pursue education while balancing cultural and family obligations. During orientation and informational sessions, husbands and other adult family members are invited to obtain family support for students and buy-in for the process. The cultures and religions of Pamoja students tend to be patriarchal in structure and may restrict their access to education and the workforce. Students report that garnering support for their educational pursuits from family members increases their own motivation to pursue education and enter the workforce. They also reported that education is seen as a practical skill and aligned with cultural and religious roles as mothers [74]. The Pamoja program serves as a crucial platform for women to pursue educational and professional development. In spring 2021, a Libyan woman with a PhD sought assistance from Empowering Communities Globally, despite being relegated to a floater teacher position at a university early childhood education center. Her situation underscores the systemic discrimination faced by individuals with advanced degrees, particularly in the hiring process, reflecting broader barriers to equitable employment for highly qualified professionals in immigrant and refugee communities [75]. She started working with the Pamoja Workforce Project and became the first Arabic-speaking instructor teaching class in Arabic at Colorado's community colleges. Holding a Ph.D. in Dual Language Learners and Curriculum, she has influenced our approach. The Pamoja Workforce Project continues to advocate for the employment of dual-language faculty within the college and university system to provide a higher level of culturally and linguistically relevant education for refugee and immigrant students.

### 3.10 Cultural bridging, a step towards inclusion

Cultural bridging requires strengthening of anti-bias policies and systems. Living at the intersection of multiple cultures and languages as an individual, family, and community presents unique challenges, often marked by a sense of not fully belonging to any single cultural or linguistic group [76]. A felt sense of disconnect and alienation can impede students' ability to fully engage with their home culture and language, as well as their new cultural and linguistic environment. Studies show that children who do not maintain their first language might struggle with cognitive flexibility, literacy skills, and interpersonal communication [23, 77]. Reports from the Pamoja Program indicate that parents often face the challenge of balancing the pressure to conform to the dominant culture of their host community while striving to maintain connections with their home community. Pamoja's cohort model

and learning communities provide regular weekly support to students, information sessions for the entire family, homework help sessions to support relevance and meaning in topics, home visits and wrap-around supports to create inclusive spaces for learning. Said practices reinforce the relevance of education to students' cultural context.

Pamoja staff conduct workshops for colleges and local organizations providing cultural and linguistic humility and responsiveness and support integrating diverse perspectives into educational curricula. At the individual and community levels, Pamoja staff promote community dialog and engagement by utilizing volunteers from the community to support students with their homework and enhance their digital skills. Through various Pamoja programs, newcomers also learn about local social norms, expectations and values while building relationships with residents. In promoting a multicultural and multilingual environment, the Pamoja Program facilitates the exchange of cultural practices and perspectives. By fostering an open-minded attitude and willingness to learn and welcome each other, Pamoja Program can contribute to a more harmonious and learning community for the students.

### 3.11 Systemic integration of digital literacy

During Pamoja's first cohort, the onset of COVID-19 underscored the critical need for digital literacy within the Pamoja Workforce Project. Student candidates encountered significant challenges due to limited access to computers and minimal prior experience with digital technologies. Recognizing this gap, the program prioritized the development of digital skills to ensure that students could effectively engage in online learning and communication platforms. This lack of proficiency with digital tools and platforms results in difficulties navigating virtual classrooms, accessing educational resources, and completing assignments. Consequently, these students face barriers to effective communication with instructors and peers, limiting their participation in collaborative activities and discussions.

The disengagement is often compounded by the social isolation that refugees, particularly refugee women, frequently experience [78]. The Pamoja Workforce Project partnered with Teach by Tech, a nonprofit serving refugees and immigrants, to offer digital literacy training. They also collaborated with the Jeffco Workforce Center, which funded the classes and provided laptops, and with the Denver Public Library's Digital Inclusion team for instruction. These partnerships were essential in addressing the needs of individuals with no prior computer experience [79]. Digital literacy classes were conducted via Zoom, using interpretation lines, chat functions, and muting features. The instruction covered essential skills such as using Google Drive, Microsoft Word, managing documents, navigating higher education course platforms, and email management. Additional skill support ensured proficiency. These collaborations were key in integrating necessary services, enhancing technological competence, and helping participants successfully complete the educational courses required for certification. "The program really improved my computer ability by offering support in learning how to use a computer and giving me a computer. I could not have done any college class without it" [80].

### 3.12 Access to workforce increases income and wellbeing

Pamoja program provides wraparound services, including formal education and professional development delivered in their preferred language by female trainers

or community interpreters. Additional support includes homework and college readiness assistance, apprenticeship opportunities, networking, credentialing, employment system navigation, mental health services, financial health classes, digital literacy instruction, parenting support, well-being classes, and individual check-ins. Refugee and immigrant women play a crucial role in contributing to the family's financial stability. Most Pamoja participants are married women with a working spouse and children. Securing employment in early childhood education roles significantly enhances their household income, enabling it to reach a livable wage. As participants progress through the different levels of the pathway, they become eligible for promotions within the field, which are associated with increased compensation.

### 3.13 Access to leadership and advocacy

Staff members of ECG/LFSRM and program participants serve on various councils and advisory boards, contributing their expertise to support local and state initiatives focused on diversity, equity, and inclusion. Advocacy within our projects originates from and with the individuals directly involved, with participants advancing to roles such as coordinators, supervisors, and managers. This progression underscores the significance of empowering community members to assume leadership positions and drive change from within [81].

Leadership and advocacy now have dedicated projects within our respective organizations. We are investing in hiring and professional development for individuals from the communities we serve. Additionally, we connect staff and community members to opportunities for training, coaching, and mentoring. They gain experience through roles such as classroom observers and coaches, serve on state committees to represent community perspectives, teach professional development classes for early childhood education teachers, lead change initiatives, and advocate for language justice, among other responsibilities.

### 3.14 Transportation and childcare

There is a positive correlation between access to transportation and increased rates of student class attendance. When Pamoja was able to offer transportation to students, students were more likely to attend their in-person classes. Pamoja aims to establish a partnership with a local organization that provides driving classes for Arabic and Dari-speaking community members, while actively exploring additional solutions to address participants' transportation needs. Despite these efforts, access to reliable transportation remains a substantial barrier, particularly for participants and smaller organizations that lack the resources to bridge these gaps effectively. For all in-person classes, Pamoja provides childcare on site and utilizes student teachers who have the required skills to provide quality care. While Pamoja has been able to support participants in class, access to child care remains a barrier for caregivers.

## 4. Expand projects for greater impact and social inclusion

### 4.1 Fatherhood project

The listening session for the second cohort led to the creation of the Fatherhood Project. This cohort revealed that participants were applying new knowledge from the

program to their family lives, resulting in significant changes in parenting and family roles. Participants reported shifts in parenting, guidance, and discipline approaches, along with changes in their husbands' perspectives on family roles. Many participants expressed a desire for their husbands to join the program to improve collaboration at home and support their workforce transition. The project, led by a community-based fatherhood advocate, recognizes the need to navigate differences in family roles between the U.S., where responsibilities are often shared, and the traditional practices of the cultures served [82–85].

The Pamoja Fatherhood Project, another key initiative of Empowering Communities Globally, offers comprehensive family-centered case management, parenting education, access to community-based services and social connections for fathers. It seeks to enhance fathers' well-being, strengthen protective factors, promote relationship-building within the family and involvement in their children's lives, and support their financial health through education and workforce development. Adapting to new family roles and dynamics within a different cultural context presents additional difficulties. Refugee and immigrant fathers must navigate complex immigration systems, secure low-paying employment before initial subsidies expire, and endure extended work hours, while striving to provide financial and emotional support to their families. Cultural and linguistic barriers can further isolate them from local support networks and community resources, exacerbating feelings of alienation. Strengthening relationships with other fathers in their community begins to develop a network of local friends and can alleviate some of the isolation they feel. By connecting with other fathers, refugee and immigrant fathers share experiences and build friendships for emotional support and practical advice on the similar challenges they face.

### 4.2 Family, friend, and neighbor

Family, Friend, and Neighbor (FFN) care refers to informal childcare provided by relatives, friends, or neighbors in a home setting on a regular basis. It is the most common form of childcare in Colorado and across the U.S. Refugee and immigrant parents often prefer FFN caregivers because they share the same language and culture, providing a trusted and culturally responsive care experience that aligns with the families' needs [85]. FFN childcare is more affordable than childcare centers and offers greater flexibility in location and service hours. In October 2020, ECG received a grant from the Colorado Health Foundation to use a participatory action research (PAR) approach to build relationships with refugee and immigrant communities, identifying and organizing FFN providers in Denver. Previously, access to these communities was limited. The Pamoja Workforce Project offered insights into the caregivers of participants' children. With funding and the PAR approach, FFN providers began to self-identify, collaborate, advocate for their rights, and secure materials to enhance the quality of care in their homes.

ECG collaborates with 22 FFN care providers who speak a variety of languages, including Arabic, Burmese, Dari/Farsi, French, Somali, Swahili, and Twi, to improve their services. Using participatory approaches, ECG helps providers identify and overcome challenges, setting professional SMART goals to support their progress. Providers have requested training on topics such as early childhood brain development, mindfulness, culturally relevant and developmentally appropriate practices, parent-provider communication, and business management. ECG

also provides opportunities for FFN providers to share their perspectives on state platforms, like the FFN Advisory Committee and the Colorado Statewide Parent Coalition.

The FFN program enhances social skills by fostering trust, encouraging open communication, and creating a space for self-discovery. It aims to build confidence, ensure all voices are heard, and promote equitable solutions. Empowering Communities Globally (ECG) is part of the Home Grown initiative, which recognizes that FFN care is the most common form of non-parental child care, especially among refugee and immigrant families, but remains the least supported. The program seeks to remove policy barriers, improve home-based care practices and business models, and elevate the FFN sector, ultimately improving care quality and expanding parents' high-quality child care options.

### 4.3 Home visiting

Qualitative data from the Pamoja Workforce Project indicated a need for wrap-around support extending beyond higher education. ECG's three decades of experience in refugee camps and conflict zones demonstrated that home visiting programs can effectively bolster protective factors [86, 87]. In a community plenary, Pamoja staff and participants agreed that a home visiting program could provide the additional support needed beyond educational services. Research by MPI indicates that home visiting programs are especially beneficial for refugee and immigrant families, as they aid in successful integration and improve overall well-being [88].

In 2021, Empowering Communities Globally launched the Pamoja Home Visiting program, serving Afghan, Myanmar, MENA, and Central East African communities. The program uses the Partner in Parenting Education curriculum, with a trauma-informed approach to parenting. Recruiting home visitors from the same cultural and linguistic backgrounds as the families helps build trust and ensures more effective and empathetic support. This alignment enhances communication, making the interventions more relevant to the families' needs and experiences [89]. Since its inception, the program has served over 180 families, providing non-clinical mental health support. Families have expressed concerns about being judged and fear that unfamiliar rules might lead to the removal of their children by the State.

"I can't help my child with homework because I do not speak or read English. Rules and laws are different in my country. I am not sure where to go or whom to ask about that. I feel like I have no control over our lives here" [90]. The overall design of the Pamoja Program can be replicated; however, the details and emphasis within the program will vary from community to community depending on the specific needs and situations that arise from an initial needs assessment. Information arising from focus groups and initial workshops along with information provided during home visitations stimulates discussion around various behavioral role models and daily patterns of behavior that influence the success of a higher education and entrance into the workforce for women who are newcomers.

## 5. Conclusion

Pamoja Workforce Project recommends several components to consider in creating an equitable and inclusive framework to accessing high education and

successful matriculation: Transportation and childcare are significant barriers for cohorts of students. Holding classes in community-based locations with interpreters and child care onsite is essential to overcoming these challenges and ensuring success. In-person class sessions are important for Pamoja candidates as they provide a unique opportunity to strengthen the relationships with other women in their cohort and other cohorts who share similar historical contexts and the struggles of being newcomers. The face-to-face interactions foster a sense of community, develop trust, and mutual understanding that online or remote learning environments are harder to develop. By participating in in-person classes, Pamoja candidates engage more deeply with their peers, share their experiences, and support one another through the challenges of adapting to a new life. Such cohort-based learning environments enhance retention and completion rates while creating a strong network of support, which is essential for overcoming social isolation—a common issue reported among the candidates. Combining cohort models and required learning communities in the courses contribute to deeper learning experiences. Candidates connect with others, learning from each other and encouraging the completion of their educational journey together. Research underscores that relationships formed in learning environments play a crucial role in academic achievement. Implementing policies and practices that support multiculturalism and multiculturalism in the classrooms as well as the community at large. Pamoja staff offers workshops to colleges and local organizations providing cultural and linguistic humility and responsiveness. Pamoja staff supports integrating diverse perspectives into educational curricula, and encourages community dialog using volunteers from the community to support students in their homework and digital skills.

Through Pamoja Programs Newcomers learn about the local social norms, expectations and values, while building relationships with residents through social connection events, homework support programs and parenting education through home visitation and community workshops and story hours. Promoting a multicultural and multilingual space, exchanges of cultural practices and perspectives are shared [91]. By fostering an open-minded attitude and willingness to learn and welcome each other, Pamoja Program can contribute to a more harmonious and learning community for the students. Effective social programs like the Pamoja Program require those in positions of power to step back, listen, and learn. This approach enables us to address the complex challenges faced by people who live the experience of being a newcomer and to shift the attitudes of those in influential roles.

Increasing access to higher education for R&I produces significant gains for our communities, especially when R&I women are the students. R&I women face insurmountable obstacles in their home countries or are not able to access an education. The opportunities to go to college are life changing for them and their families. Through the context of ECE college classes provide students with strengthened protective factors and contribute to building resilience and fostering a more cohesive and.

## 6. Recommendations

The findings of this research offer critical insights for scholars, policy makers, faculty, and decision-makers within higher education institutions, highlighting several key areas for improvement. The theoretical contributions stem from the multi-faceted

approach to understanding educational access. Refugee and immigrant students bring a wealth of unique experiences, perspectives, and skills that significantly enrich the college community and a multi-layered solution is needed to address the barriers and gaps bolstering institutional capacities for diverse learners. By strategically expanding higher education opportunities for refugees, colleges tap into a diverse pool of skilled human capital, demonstrating a commitment to holistic sustainability, inclusivity, and equity. University education is more than just a source of knowledge; it is a pivotal pathway in laying the foundation for refugees' long-term development and empowerment. Much of the previous research in this area has been either highly quantitative, concentrating on financial metrics, or qualitative, examining socio-cultural factors. The Pamoja Workforce Project model bridges these approaches. The Pamoja Workforce Project comprehensive model can be applied to or adapted for other marginalized or displaced communities, allowing researchers to further validate or question the findings. By employing a multi-disciplinary approach that integrates both financial and non-financial variables, the study provides a comprehensive understanding of the diverse barriers refugees face in accessing education.

Refugee and immigrant students contribute to the academic richness of institutions through their diverse cultural and intellectual perspectives. Their varied experiences can enhance classroom discussions, foster global awareness, and promote cross-cultural understanding among peers. Promoting inclusivity through language justice and comprehensive support systems. To broaden access to higher education, it is imperative to embed language justice throughout every stage of the educational experience. This includes ensuring that application processes, financial aid, registration, and academic advising along with classes at the beginning levels are accessible in multiple languages. Institutions and faculty can work on developing culturally responsive assessment methods to assess content learning rather than their ability to write in dominant language. Establishing career navigation services in students' preferred languages is essential. These services should offer personalized support for career development, college readiness, and skill-building. Adopting a cohort-based approach, where groups of students move through their academic journey together, can foster a sense of community and enhance retention and completion rates. This collective approach shifts the focus from individualistic practices to a more supportive, community-oriented model.

To support refugee and immigrant students effectively, institutions must adopt a holistic approach that addresses their unique needs. Cognitive support encompasses providing the necessary academic resources and tools, and this can be complemented by social-emotional support, both non-clinical and clinical, to help students navigate the stresses of academic life and cultural bridging. Refugee and immigrant students often face significant challenges, such as language barriers, social isolation, and navigating unfamiliar systems in their host country. Integrating practical resources like childcare and transportation is crucial to ease logistical burdens that can otherwise detract from academic focus. Non-clinical support could involve creating a welcoming community using a cohort model and learning communities that combat isolation.

Systemic change is crucial for fostering equity within higher education. Institutions must conduct thorough assessments to identify and address systemic biases and dominant narratives within their policies and practices. Implementing training programs designed to recognize and dismantle these biases will help create a more equitable environment. Revising institutional frameworks to challenge and dismantle entrenched systems of inequality is essential for ensuring that all students have an equal opportunity to succeed.

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Section 3

# The Growing Child: Developmental Perspectives

Chapter 8

# Perspective Chapter: Metacognition in Early Childhood – Factors for Development and Practices of Assessment

*Nesrin Ozturk*

## Abstract

Metacognition is an important skill not only for school but also for life. Although earlier literature underestimated young children's metacognitive competencies, recent research reported that between the ages of 3 and 7, there is a qualitative rapid development in metacognition, and children can show evidence for metacognition as young as 3 years old. In this sense, some practices can be employed to reduce the potential discrepancies among children and the impacts of previous scarce experiences. Those pertain to initiating social interactions with family members and peers for other- and shared-regulation, delivering instruction encompassing metacognitive interactions, and using the language of thinking during those interactions. Moreover, children should be presented with biologically valid, relevant, meaningful, contextualized, structured, familiar, and interesting tasks in an environment bearing perceptual cues to support metacognitive engagement and provoke positive emotions such as the feeling of success or motivation. Regarding recent technological developments, e-learning opportunities can also be employed. While these practices can enhance metacognition in children, assessment can be done via think-aloud, observations, interviews, questionnaires, and naturalistic tasks. Assessment should also serve to understand metacognition opportunities in an environment to calibrate children's competencies. Finally, assessment practices should include peer- and self-assessment to support children's independence and authenticity.

**Keywords:** metacognition, children, social interactions, task characteristics, learning environment, assessment

## 1. Introduction

Metacognition was characterized as the awareness and regulation of first-level cognitions [1]. It is a guide to plan, monitor, control, and evaluate one's thinking, choices, and performances beyond their knowledge about self, strategies, tasks, and

goals [1, 2]. A form of higher level of thinking, metacognition is an important skill not only for school but also for life [2]. It helps individuals identify and solve problems [3], make wise and thoughtful decisions [1], remember more [4], and improve learning motivation [5]. In this sense, metacognition helps individuals learn more efficiently [6] and improve performance [5, 7, 8]; thereby, they can become independent learners [6, 9]. While these outcomes may pertain to the school, metacognition has more worth. Metacognition, indeed, is a vital factor in social cognition, self-control, personality development [1], self-worth, stress management [10], emotional intelligence [6], life-long learning [11], career success, and well-being [12]. It is an indicator of the *educated intellect*, which is a pressing need in the current century [5] and future life success [10].

While research focuses on metacognition in adolescents or adults for practical or methodological reasons, it has developmental roots in childhood. Not different from adults, when children engage in strategic approaches to tasks, they use resources purposefully, monitor and control processes, use language to direct themselves, seek assistance, and show persistence in managing demands [9, 13]. However, because of earlier methodological artifacts [14] or developmental characteristics such as children's not showing enough language proficiency to report their cognitions [15] or limited working memory capacities [16], previous literature underestimated children's metacognition [9, 14–16] and stated that metacognitive skills emerge around the age of 8–10 years [8]. However, recent research using age-appropriate methodologies challenged this position [14] and reported that children as young as three can exhibit metacognitive competencies [10, 17]. The following section will delineate a trajectory of metacognition development in young children.

## 2. Metacognition development in young children

Metacognition competencies are related to executive functioning, language and conceptual development, and theory of mind [10, 14, 18, 19]. Between the ages of 3 and 7, there is a qualitative rapid development in metacognition [10]. However, exponential variations because of individual differences and the characteristics of the environment can be observed [10, 20].

Typically, children before the age of one and without direct instruction [2] begin to develop a theory of mind and can understand some things about their own and others' mental worlds [2]. Following this, when they are around 1.5 years old, they can monitor uncertainty, ask for help in a memory task to manage it strategically, and evaluate their decisions when given the chance [19]. Two years old children can monitor their knowledge states, communicate it verbally or non-verbally [19], as well as predict other's actions [21]. Children of 3–4 years can separate mental processes from their associated behavior [22] as well as real objects and mental entities (i.e., thought) [2]. They can show metacognitive sensitivity when the tasks are interesting, and they can exhibit verbal or nonverbal cognitive ratings during problem-solving [16, 19, 21, 22]. They can assess the reliability of the source of information and use it to predict assertions or endorse their claims [15]. They can understand the effort to remember, differentiate easy and difficult tasks, and show conditional knowledge to allocate attention [17, 22]. When children reach 5, they can use mental imagery to explain their performances [2], and children of 5–6 years can evaluate their performances regarding the item difficulty [17]. They can also engage in checking, error

detection, and self-commentary; however, the ability to regulate cognitions based upon the information derived from monitoring is associated with inhibitory control capacities at the time [14].

When children are between the ages of 6–8, their access to thought processes and explaining how they did a task is similar to adults [2, 10]; however, regulatory mechanisms may not be as fully developed as adults [15]. Although young children can transfer strategies to new tasks [22] and they are capable of planning [16] and evaluating their cognitive operations [15, 22], their regulation (i.e., control) may be still emerging [15] or it may depend on their confidence or reward [17]. Around six, children's judgments of learning become relatively accurate; however, their predictions about future learning experiences are overconfident [19]. Children of 7–8 years, on the other hand, can make more accurate predictions [19] and allocate time to meet different task demands. By 8 years of age, children use domain-general competencies while their domain-specific knowledge and strategies still improve [14]. As the trajectory proposed, metacognition improves as a function of age [17]. However, it is also important to highlight that children's experiences [2] and schooling [16] can facilitate metacognition development. In this sense, the following research-based factors will be presented to help parents, caregivers, and teachers promote children's metacognition.

## 3. Factors for metacognition development in young children

The period between the ages of 3 and 5 is fundamental for metacognition development [23], and developing metacognitive competencies is important for conceptual change [19] and better learning outcomes [24], for example, emergent literacy [2, 25], literacy [2], problem-solving [26], and science and mathematics [2, 27]. Metacognition is a complex and dynamic phenomenon developing based on external and internal influences [2], availability or intensity [8] of those influences may be inhibitory or facilitative. Identifying inhibitory factors is beyond the scope of this section, and the following research-based factors that can facilitate the development of metacognition in early childhood will be presented.

Metacognition is a constraint emphasizing *I-thinking*; however, in Vygotsky's [28, 29] framework, thinking and metacognition can be internalized via symbolic tools or interactions in a socio-cultural realm. Even before children enter the school system and are exposed to formal education of thinking, they interact with other cognitive agents (i.e., parents, caregivers, and siblings) at homes and playgrounds [2]. Through these social interactions, an understanding of the mind can emerge due to, for example, parents' directives [30], modeling [31], suggestions, support, and encouragement [31], and children can internalize what they are exposed to [6] or create behaviors or cognitive products that they cannot manage on their own, for example, during shared regulation with a sibling [32]. While social processes in the Vygotsky [28, 29] notion help children acculturate metacognition, children move from other regulation to self-regulation [14] using different systems, such as reflection, visual representations, discussion [2], or scaffolding and encouragement for independent problem-solving [9]. However, when parents themselves are not metacognition-competent enough [33], when they do not hold a view of educating metacognitive children [2], or when their education level is relatively low [10], the development of metacognition in their children must rely on other sources in the environment, if there are any at all.

Besides family circle, children's metacognition may improve in their dyads or play groups. As learning is a social process and emotional context is influential on learning, children's collaborative or peer-assisted learning can support self, others, and shared regulation. In pairs or groups, children can communicate their understandings, control cognitive processes, and evaluate performances to goals while cognitive processing and load are reduced [34]. Moreover, in such groups there may be a non-threatening and mastery-oriented evaluation [35]; thereby, children's regulation of others' behavior [34] or peers' guidance and support [36] can increase. Moreover, children may regulate their cognitions and assume responsibility more in the absence of an adult [37], and opportunities for joint problem-solving, imaginative play, or re-enacting a story [34] can help with metacognition development. Indeed, such activities where children's motivation and engagement increase can help children express themselves, develop emotional and cognitive skills, and solve problems to be a part of the game or manage the demands and attributes of their character [5, 22].

Instructional practices and activities may influence young children's display and development of metacognition [9, 22, 24, 38, 39]. Instructional practices may include explicit teaching of strategies, modeling thinking or problem-solving, enquiring into or challenging children's thinking, metacognitive prompting or dialogs, enabling children's self-questioning, reflective dialogs, guided discovery, dialogic teaching, children's self-assessment, using rubrics for peer- or self-assessment, shared regulation, collaborative learning, provision of feedback, and having children think aloud their minds [2, 5, 9, 14, 16, 20, 22, 31, 38, 39]. As these activities promote consciousness and introspection [5], children can acquire the capacity to explain, ask different kinds of questions, analyze, discuss, argue, reason, explore, and evaluate ideas. However, when teachers are not competent with metacognition or in delivering such instruction [9, 31] or when their beliefs or opinions about the usefulness of metacognition or children's capabilities of metacognition do not invite its instruction into action [2], children's development may be impacted adversely compared to others who are supported sufficiently.

During those social interactions, the language of thinking [40] may be utilized to facilitate metacognitive experiences. Language, indeed, is a tool to organize and modify thoughts as well as remember task requirements [10]. While children can develop an understanding and knowledge of cognitive states via mental state words [2], their awareness of thoughts and mental events may increase [36]. In this sense, the language of thinking may provide words and concepts to regulate and evaluate thinking [40], for example, via questions of "how" and "why." Those types of questions can be facilitative in children's explaining their minds and actions [9], reasoning, developing an idea, probing assumptions, looking for evidence, and solving a problem [40]. However, it may not be always possible to use such a language, and in these cases, children can be asked to keep reflective journals where they take notes of awareness of their processes and how they manage difficulties [5].

Social interactions at home or in classrooms may provide children with some motivation to engage in higher-order thinking. However, one needs a stimulus to think about [41], and regarding children's characteristics, concrete stimuli may be more productive in initiating strategic actions. That is, when children are presented with biologically valid [10], relevant [2], meaningful [16, 22, 30], contextualized [2], structured [2], familiar [23], and interesting [22, 30, 42, 43] tasks, their engagement in higher-order thinking may be facilitated. Such tasks can help children perceive it as worthy of time and energy, and they can create a legitime reason to perform thinking for the best outcomes [41]. Those characteristics may be reflected in problem-solving situations.

Moreover, when children are presented with problem-solving tasks [2, 7, 23], they should be given opportunities to choose the task [5, 6] and set their goals [23]. Thereby, children can see *me-in-cognition* [6] and assume responsibility for their strategic endeavors [5]. However, it may not always be easy for children to analyze task demands and set goals. In such cases, they need guidance and support [23] to activate proper thinking type; otherwise, they would be de-motivated [2]. In relation, as no task may not be free of emotional context [10], tasks that evoke positive emotions (e.g., feeling of success) may help with the development of metacognition [21]. Also, tasks that provide a reward (e.g., an external prize or internal satisfaction) or entail a moderate risk may facilitate authenticity and reflection opportunities [2].

Other cognitive agents, instruction, and stimuli may be a part of a bigger ecosystem and negotiate its social and physical characteristics. In a natural environment, the perceptual cues, evaluation of interactions, and individuals' interaction with and reactions to these can make a drastic difference in the acquisition and use of metacognition [10, 21]. Regarding the environmental characteristics, the availability of support and predictability of change impact children's metacognitive engagement [23]. While children can deduce goals from the available cues in the environment by using their background knowledge and experiences [6] as well as evaluating the task difficulty [23], the predictability of change impacts their metacognitive engagement. For example, young children around three tend to change their goals when they expect a change in the environment and keep their goals when the change is unexpected [23]. Moreover, as the psychical world is socially mediated [21], the unpredictable characteristics of social interactions also cause a need for metacognitive regulation [21]. By the age of three, through intersubjectivity and depending on the emotional quality, children engage emotionally with their caregivers and regulate their affective behaviors at different levels [21]. In this sense, physical cues should provide guidance and scaffolding via, for example, thinking maps, action plans, rubrics [44], Venn diagrams, webbings, or concept maps [24], and the social interactions should entail positive emotions (e.g., acceptance). Furthermore, both social and physical characteristics of the environment present a moderate risk of uncertainty, which does not interfere with children's emotional or personality development.

Technology and e-learning may also provide opportunities to facilitate metacognition in young children [2, 5]. While there may be nothing metacognitive about using technology [2], opportunities can be built via, for example, open-ended e-learning or problem-solving tasks where children can choose entry and exit points among many by regulating their cognitive processes [2]. On various platforms, children can play games, including multiple tasks, and get support [2, 5] from advisors and peers at different levels [2]. When human support is not available, children can still get scaffolding and feedback via coding processes for a product [5]. Moreover, through online cooperation, children can regulate each other for a specific purpose [2]. Moreover, children can watch cartoons or videos on various platforms where models display metacognitive behaviors to solve problems or meet task demands. In the case of the scarcity of metacognitive social agents, these tools can provide some input on how people think about their cognitions and how they regulate them.

All these factors can be effective in developing children's metacognition when they are motivated [2] to engage in the stimulus, interact with others using the language of thinking, and take risks to problem solve or meet task demands. When they are demotivated toward a task or person because of, for example, thoughts or beliefs about themselves, including their capabilities or motives, they may restrain from putting energy and time into these stimuli or interactions. When children are criticized for

their engagement and effort in fulfilling a task or when they cannot get any assistance and feedback, they may lap into a state of helplessness. In such cases, children may think that they have no control over their ability and become unresponsive and even anxious toward similar stimuli in the future. However, when children are supported to think that ability is not fixed and there may be failures or mistakes, they start to show sensitivity and develop metacognition competencies [2]. In this sense, children can be provided with opportunities to develop responsibility for task completion and ownership by allowing them to choose what they are interested in and dividing the task into small steps. That is, while metacognitive competencies emerge, children's experiencing the feeling of success and developing trust in their competencies should also be prioritized.

Developing metacognitive competencies may be a demanding process. However, it is important to highlight that earlier development of metacognition helps reduce the discrepancies affecting performance among students [22] or the impacts of previous scarce experiences which might put some in disadvantageous positions later in school and life [16]. In this sense, social agents raising young children should pay attention to integrating metacognitive incidences in their interactions and environments.

Those practices presented in this section might be initiated discreetly in naturalistic environments, or they may be presented cooperatively in an ideal environment. Before designing such opportunities, it is important to assess children's extant competencies, first and integrate metacognitive opportunities incrementally and iteratively regarding their developmental characteristics and needs. Moreover, the effectiveness of such practices and children's gains can be confirmed via systematic assessment procedures. In this sense, the following section presents assessment methods of metacognition in young children and emphasizes that assessing children's metacognition cannot be a discrete practice independent of its context.

## 4. Assessment of metacognition in young children

Assessing metacognition in young children may be challenging due to children's developmental characteristics and its adverse connotations of categorizing children as availability or production deficient. Assessing young children's metacognition indeed serves to evaluate the effectiveness of current practices of education and child-raising as well as design upcoming educational practices. It may be a prospective investment in helping societies reshape themselves with educated intellects.

Children's metacognition can be accessed via various methodologies, such as think-aloud, observations, interviews, questionnaires, and real tasks [2, 7, 14, 22]. While assessment procedures might be prospective, retrospective, and concurrent, each's drawbacks should be compensated via the integration of various assessment modes [45]. Moreover, it is important to focus on assessing both aspects (i.e., metacognitive knowledge and regulation) because ignoring one would produce a deficient understanding of children's competencies. In the following, different assessment methods will be described for practical use.

Think-aloud pertains to the theoretical model of metacognition. To assess children's metacognition, a base cognitive task can be chosen, and then children can be asked to report their thinking [15, 46] during or after task completion (see the example in Appendices). While children's thoughts are recorded, it is important to remember that this methodology depends upon children's ability to communicate their mental experiences. Moreover, while data may be rich about the conscious

processes, some aspects of monitoring or controlling may not be available to awareness (i.e., [47]), and there may not be clear evidence for children's adapting cognitions [14]. Furthermore, the choice of task may confound children's metacognitive proficiency. For example, when the task is easy, children may tend to feel highly confident, and accurate evaluation of metacognition may be prevented [15]. Moreover, even when the task is appropriate, it may be difficult to directly quantify metacognitive abilities based on a single measure where children are challenged with their working memory, and as previously highlighted, language capacities [15, 16, 24, 38].

To compensate for the challenges of think-aloud, observation methods can be used (see Appendices). They help record what children do rather than what they remember doing and also establish a link between the context of the task [16]. Moreover, children's nonverbal behaviors may signal implicit knowledge before awareness; systematic observations can help track metacognition development and social processes involved in metacognition [14]. In this regard, the Cambridgeshire Independent Learning (C. Ind. Le) framework and the Children's Independent Learning Development (CHILD 3–5) instrument can be used by researchers and teachers, respectively [16]. These assessment tools focus on verbal and nonverbal behavioral indicators of the 3–5-year-old age group's metacognition during other, shared, and self-regulation instances. The 22-item CHILD is coded on a 4-point scale across 4 subsections, including emotional, prosocial, cognitive, and motivational aspects. Moreover, the Strategic Behavior Observation Scale (SBOS) can also be used with 6–8-year-old children. SBOS has a 3-factor structure of 12 cognitive, metacognitive, and motivational strategic behaviors. On this scale, cognitive regulation was related to task performance, and motivational strategic behaviors pertained to domain-specific self-concept [48]. While observation tools can be employed to detect early metacognitive skills, children's intentions and internal representations must be inferred. In this sense, such cognitions are a challenge to reliability [14] and the rater should have sufficient knowledge of metacognition and child development. Moreover, when the observers are physically present in the task environment, some children may feel under pressure and restrained from task completion. Observing children may also be also time-consuming, and raters may have difficulty maintaining attention and recording all instances of metacognition as instances may be fleeting [2]. To eliminate such effects, videos may be recorded; however, they also bear some challenges, such as the natural flow of conversations may not be amenable to being sectioned into different meaning units [2].

Interviews can also offer valuable evidence about children's mental processes. While they can be employed retrospectively or prospectively, children's mental processes may not always be clear to them, and they may talk about something completely different than the test item. Moreover, the concepts of assessment practices may have a different meaning for each child; thereby, coding might bear some challenges. Still, although there are challenges to conducting interviews with children, the interviewer can obtain rich data via, for example, follow-up questions or simply listening to children's detailed answers. During interviews, it may help children talk their minds with a stimulus in the scene [2]. An example of such tools is the Metacognitive Knowledge Interview (McKI) which is developed for 3–5-year-olds and delivered after the task [7]. McKI focuses on metacognitive knowledge about the activity performed via 11 questions, and these questions pertain to children's knowledge about themselves and the task. The questions can be scored on a 3-point scale ranging from 0 (not metacognitive response) to 2 (appropriate metacognitive response).

Questionnaires are other tools to assess metacognition retrospectively or prospectively. That is, children can be asked what they did or are going to do for task completion, respectively [2]. However, these tools also impose some challenges in understanding children's metacognition. Children's comprehension of the items and language proficiency may be limited to responding to the items. Also, they may not remember what they did for task completion [2]. Compared to interviews, because items are limited in scope and number, children's answers may be limited.

Although children's metacognition may be assessed via various methodologies, those who assess children should remember that children had better engage in task completion rather than answering hypothetical questions [16]. As metacognition is task-specific, each task has the potential to produce a metacognitive experience. In other words, the characteristics of the task and its context should be ensured to achieve validity and not to label children as deficient in metacognition. In this regard, children should be presented with age-appropriate [14, 15], familiar [2], and contextualized [7] tasks [14, 15], and such tasks should be presented in playful, meaningful [14], and naturalistic [34] setting. Therefore, children must see the relevance of tasks to themselves and the coherence between the learning environments [2].

Assessing children's metacognitive competencies cannot be limited to methods and labeling of their competencies. Assessment should, indeed, serve for a holistic understanding and explore the opportunities in an environment because, without a promising environment, not all children can essentially develop metacognition. In this regard, the General Studies Metacognitive Orientation Scale (GSMOS) can be employed to search for evidence between the properties of a learning environment and children's metacognition. This 15-item 3-point scale requires children to comment on the characteristics of their learning environment regarding metacognitive features. Those items pertain to teachers explicitly discussing and modeling cognitive strategies, explaining the relevance of strategies, and providing authentic opportunities for metacognition [49]. Then, children's metacognition can be assessed, and the congruence between these two tools can be evaluated. One drawback of this scale might be that although teachers may present opportunities with metacognition development, children may not fully perceive them. In this regard, metacognition instruction can be tailored to children's characteristics and needs.

Finally, the goal is to educate independent and authentic learners. In addition to assessing children's metacognition, it is important to create opportunities for peer- and self-assessment [2]. In peer assessment, children can assess each other's processes and products toward a goal in groups or pairs as well as during and after a task. On the other hand, when each child evaluates their processes and products, they engage in self-assessment. For both of these practices, children can be provided with age-appropriate rubrics [2]. These two practices are important in boosting children's consciousness and confidence in their cognitive abilities [2]; they should be informed of their performance to ameliorate any deficiencies, if there are any at all.

## 5. Conclusion

This chapter reviewed metacognition development in young children and offered suggestions to boost it, practically. It also explored assessment practices and emphasized the functions of assessment in developing children's metacognition. Exposed to increasing evidence for children's metacognitive competencies, we—adults—should pause and think about human development historically. While metacognition was

first proposed in 1979, it was not a brand-new feature of us. Indeed, metacognition can be traced back to the ancient Greek philosopher Aristotle [50] and since then, we have engaged in higher-order thinking and transferred it to the next generations. Although we have not been able to do this task so far deliberately, tactfully, and on large scales, ignoring or underestimating young children's metacognition competencies would be a betrayal of the cumulative efforts of science and our future of a more peaceful world.

## Appendices

### A. Think aloud example

Kelleher [47].

### B. Sources of assessment tools

Cambridgeshire Independent Learning (C. Ind. Le) framework: Whitebread et al. [16].

The Children's Independent Learning Development (CHILD 3–5): Whitebread et al. [16].

The Strategic Behavior Observation Scale (SBOS): Dermitzaki et al. [48].

The Metacognitive Knowledge Interview (McKI): Marulis et al. [7].

The General Studies Metacognitive Orientation Scale (GSMOS): Thomas and Mee [49].

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Chapter 9

# Capturing Childhood Thoughts: This COVID Thing Is a Serious Thing – You Can't Cough or Sneeze in Peace

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**Abstract**

This chapter captures the thoughts of a seven-year-old Guyanese child, who is keenly aware of and psychologically impacted by the COVID-19 pandemic, but might not have been sufficiently engaged in decisions relating to church attendance and related activities. Evidence drawn from various sources and studies conducted with young children is shared to show the general effects of adult-children engagement practices, which assume young children are dependent and inert recipients of their decisions. The benefits of consulting with children, sharing their views, and allowing them to make choices are outlined. While advocating the importance of listening to children and emphasising the right for children's voices to be heard, the importance of overriding children's expressed views and choices at inevitable boundaries is acknowledged. Described too are suitable and workable methods for respecting young children's opinions and decisions on matters affecting their lives.

**Keywords:** child-friendly consultations, childhood decision-making, COVID-19 stressors, ethical child engagements, mask-wearing

## 1. Introduction

This chapter brings to life the experiences of a resilient seven-year-old, Ariel (pseudonym), as she navigates her way to, during, and from church in the latter part of 2020. She is acutely aware of and psychologically affected by the COVID-19 pandemic. As an only child, Ariel misses interactions with friends, especially those from her church dance group, yet worries about the dreadful outcomes such interactions could attract. Ariel is the niece of one of the authors, and her unique perspective enriches the narrative of the weight of children's views.

The scene is set on a bright Sunday morning as Ariel, her aunt, and her uncle travel to church. Ariel's uncle is a pastor at the church. During the car journey, Ariel takes it

upon herself to ensure everyone wears a mask and sanitises their hands regularly. Her main topic of conversation is the severity of the pandemic and how to cope with it. Ariel is a speaker of both English and Guyanese Creoles and code-switches between the two. Therefore, English translations accompany the Guyanese Creole language or local dialect in parentheses.

> *Ariel: Yu all ain't glad fo covid to be over? [Are you all not happy for covid to be over?]*
> *Aunt: Yes, Ariel*
> *Uncle: Oh indeed, Ariel.*
> *Ariel: Me an all to! So I don't have to wear mask and sanitise meh hands steady, steady, steady. Uncle I don't able with this mask, it does mek me feel like I kaan breathe properly at all. [Me too! That way, I don't have to wear a mask and sanitise my hands so often. Uncle, I am fed up with wearing a mask; it makes me feel like I can't breathe properly.]*
> *Uncle: I don't like to wear masks either. But, we need to wear masks to protect ourselves from the covid.*
> *Ariel: I kaan [can't] wait fu [for] this covid to be over!*

As Ariel enters the church, she looks around to ensure everyone is wearing a mask. The service commences with a prayer followed by a song. Ariel sits quietly next to her aunt while she listens to a song. After about 20 minutes into the service, Ariel asked her aunt for some hand sanitiser, and her aunt handed her the bottle. As Ariel used the hand sanitiser, her aunt observed that her face had turned from a light brown complexion to "red", and tears were settling in her eyes. Ariel appeared as though she was on the verge of a medical breakdown and a severe health crisis.

> *Aunt: [In a low and worried tone] What's happening, Ariel?*
> *Ariel: [Struggling to speak clearly in a melancholic tone] A waan kaaf, but I en waan people think a gat Corona. [I would like to cough, but I don't want people to think I have COVID-19].*
> *Aunt: [Chuckles] Ok, let's go outside to cough.*

Upon going outside and before coughing, Ariel peered around the church building to make sure no one was nearby. Ariel did not want anyone to see or hear her cough. With no one in sight, she took off her mask and spent a few moments coughing. After taking a few deep breaths and being satisfied that she was feeling better, Ariel turned to her aunt and commented cheerfully: "Auntie, Wheeeew, thank goodness, that was a relief!" The church service and activities ended approximately 2 hours after the coughing episode. As they travelled from the church, Ariel again centred her conversation on COVID-19-related issues and concerns:

> *Ariel: Uncle yu preach laang laang laang just now. You mussin preach so laang again. Is covid time and I waan to go home.... I de waan kaaf bad bad. The kaaf mek meh panic fo air and a nearly dead.... This covid thing is a serious thing, yu kaan kaaf or sneeze in peace.... [Uncle, you preached too long just now. You must not preach so long again. It's covid time, and I wanted to go home.... I wanted to cough very much. Holding in the cough made me panic for air, and it made me feel like I was going to die.... This covid thing is a serious thing; you can't cough or sneeze in peace.]*

## 2. Context and connections

Coughing and sneezing were among the evident and easy-to-recognise markers that the World Health Organisation associated with COVID-19 upon its declaration as a pandemic [1]. The first case of COVID-19 was reported in Guyana on 12 March 2020, and a few weeks after the declaration, the government implemented many restrictions and regulations. For example, wearing masks was made compulsory for congregating in public spaces. Time did not permit consideration of how these restrictions and regulations could affect young children. During the pandemic, it was not common for Guyanese children to be reminded that the natural and involuntary reflex of "coughing" will persist, even when not infected with COVID-19. Though unintentional, the limited attention to coughing as a natural reflex was perplexing. After all, except for rare cases, every "normal" human has coughed at least a few, but more likely hundreds and thousands of times in their lives [2]. Scientists remind us that coughs are a protective measure in many ways and could be life-saving when the lungs and respiratory tracts are affected by elements such as air irritants, viruses, and other illnesses and circumstances [2]. Irrespective of the cause, coughs serve to expel them from the body [2].

Attempting to curb the spread of the virus and educate children about it, the life-saving reflex of coughing attracted the most negative connotations. This trend was observed in studies with children internationally, for example, in the UK, Australia, Sweden, Brazil, Spain, and Canada [3]. From our observations of working in the early childhood sector in Guyana, the most popular interpretation of the status quo of coughing during the COVID-19 pandemic was similar to the international findings. Especially for young children, two main interpretations were assigned to "the cougher": The cougher was the carrier/transmitter of the COVID-19 virus and may possibly (1) die or get very ill and (2) infect others nearby. In the case of Ariel, her concern was preventing the stigma as a carrier of the virus who could infect others nearby.

The episode of Ariel illustrates that the COVID-19 pandemic affected young children's lives in significant ways and adversely impacted their well-being. Research confirms impairment of cognition, mental, social, and physical health [4–6]. Studies show that stress levels are four times higher for children who have been in quarantine, changed routines, and experienced social isolation during pandemic situations compared to children who experience normal routines [4]. The negative impact of the reduction in physical activities and interaction with their peers during this period of their lives was particularly obvious in the report by Szpunar et al. [6]: "Couldn't see dance friends …couldn't go to dance, and …couldn't do much …." "I miss seeing my friends and getting to go to competitions or swim meets and just having fun …." "I'd pretty much be sitting on my phone talking to my friends all day…" [p. 10]. Ayyildiz et al. [5] summarise behavioural and psychological problems experienced by children during COVID-19 as follows: "… children were very bored at home, had problems with family communication, sleep disturbances, and emotional problems, and their screen use, hyperactivity, and poor concentration increased" [p. 2].

When the opportunity to reconnect socially opened, mask-wearing became the new norm. Mask-wearing by young children is empirically guided by comparative studies [7], which found that "compared to a former time when facemasks were not used routinely, there were considerably fewer respiratory infections, a lower incidence of diarrhoea cases, a decrease in allergic symptoms, and a reduced number of hospital admissions" [p. 4]. Therefore, creative mask-wearing initiatives were

introduced in early childhood classrooms and other congregated spaces. Farrer et al. [8] document approaches such as modifying routines for putting on and taking off masks and age-appropriate storage systems as described by one teacher: "We have a special mask area that has like hanging spots for every kid, it's designated, each kid has their own hanger" [p. 948].

Using transparent masks was another age-appropriate mask-wearing winning approach. These masks proved advantageous by facilitating learning opportunities for pedagogical interactions in classrooms inhibited by opaque masks [9]. The use of transparent masks provides children with the avenue to express themselves with minimal misinterpretations. Recognising that transparent masks allow visualisation around the wearer's mouth, they offer greater accuracy in identifying various facial expressions and interpreting visual cues [9].

Play also proved to be an effective tool for children to further adapt to wearing face masks. As children's language, play effortlessly served as a mask-wearing medium for communication through storytelling, games, and peer sharing [10]. Approached in this manner, children do not necessarily view the directive of mask-wearing as a punishment but a task they are happy to comply with. Allowing children to choose how to decorate their masks and practice and demonstrate the correct way to wear masks, encouraged children to get comfortable with their use [10]. These creative experiences help children express and cope with their feelings and foster mental growth in trying out ideas and ways of thinking and problem-solving.

Nonetheless, mask-wearing by young children was and is not without challenges. One of the more frequent observations has to do with using masks for playing rather than protection [8]: "I'm running into a lot of issues with the mask as to where they're becoming a game and a toy to play with … they don't want to put them on" [p. 948]. Other problematic mask-wearing issues include health-related observations [7]: "cutaneous adverse effects (itch symptoms, rash, pressure effects, and acne), and non-cutaneous adverse effects (respiratory discomfort and breathing difficulty)" [p. 4]. The overall challenges range from the lack of adherence to the proper way of wearing face masks to the discomfort children experience as a result of sweating around the mouth, pain around the ears and nose, non-adjustable straps and too big sizes for their faces. In addition, children exhibit changes in moods and express breathing difficulties, especially in hot and humid temperatures [11].

Mask-wearing is particularly difficult for children with impairments and/or disabilities, especially those that are classified as neurodevelopmental disorders. It becomes more complicated when comorbid health challenges and additional needs accompany these impairments. We have observed that children with autism spectrum disorder (ASD), classified as a neurodevelopmental disorder, find it challenging and discomforting to be mandated to wear a mask. This challenge of wearing a mask for a child with ASD increases with the severity of the disorder. However, there is still a silver lining; research has shown that children with ASD respond more positively to graduated exposure procedures to encourage tolerance for keeping the mask on [11]. Even though children with autism may be reluctant to wear a mask, particularly for extended durations [11], a graduated exposure procedure to teach mask-wearing has been proven effective in increasing mask tolerance [12–14].

Also, it is critical to consider that children with ASD may struggle with emotion recognition, and covering the face even partially with a mask further complicates their emotion recognition abilities [15]. Children with ASD often tend to look at the lower half of the face; they are likely to be particularly restricted in emotion recognition by people wearing masks since they are now forced to look at the upper half of

the face [15]. Wearing a mask creates incredible difficulty for children with ASD to recognise anger, fear, pride, and embarrassment. Such a constituted disability for an already impaired child could lead to behavioural conflict due to emotional confusion in the learning and socialising environment.

In addition to struggling with emotional regulation, it is critical to consider that children with ASD experience heightened sensitivity, making the physical sensation of wearing a mask unpleasant, uncomfortable, and distressing [16]. Children with more severe symptoms of the disorder may find it extremely challenging and emotionally upsetting to adapt to changes in routine and sensory processing, which further compounds these challenges. Wearing a mask can cause stress and discomfort, making compliance challenging. Some children with ASD experience increased sensitivity to tactile sensations, causing them to find the pressure and texture of a mask unbearable [17]. In addition, the mask may impede their respiration and speech, intensifying their discomfort and anxiety [11]. Imagine navigating a world where every touch feels amplified and every change in routine throws your senses into chaos. For children with ASD, this is a daily reality. While necessary for health, masks add a layer of distress that is difficult to comprehend for those living with such heightened sensitivity. The sensation of a mask against their skin can be so intolerable that it leads to increased stress and anxiety, making mask-wearing a significant hurdle [11]. This tactile discomfort is not just a minor annoyance; it can disrupt their ability to communicate effectively, as the mask impedes both respiration and speech, compounding their distress.

On another realm is the group of children for whom unmasking represented an invitation to death [our emphasis]. For this group, the mask must stay on. The anxieties experienced by this group are captured in the documentation of Turkish children's metaphors of COVID-19 fears [5]: "doomsday, death, deadly, bat disease, scary, germ, monster, spider, risk, invisible dust" [p. 10]. The episode of Ariel confirms such fears cut across international borders, and mask-wearing was a means to cushion the effects: "Ariel takes it upon herself to ensure everyone wears a mask …. As Ariel enters the church, she looks around to ensure everyone is wearing a mask".

## 3. The authors' reactions

The seriousness of children's experiences, fears and predicaments during COVID-19 is not to be taken lightly. Notwithstanding, we could not control our outburst of laughter when Ariel's church-coughing episode was shared. The aunt's breathtaking narration of the episode in a well-crafted animated tone attracted tears of laughter. When we did manage to contain ourselves, comments were shared, and one author questioned whether the aunt had conversations about the possible scenarios Ariel could find herself in at church during this pandemic. This was no longer a laughing matter. I think it was at this point that we realised we were experiencing a moment of "pseudobulbar affect (PBA)". Rosen and Cummings [18] explain PBA as "a dramatic disorder of emotional expression and regulation characterized by uncontrollable or inappropriate episodes of laughing, crying or feeling anger" [p. 92]. The disorder occurs due to injury or disturbance in parts of the brain that control emotions. None of the authors had been diagnosed with BPA, but this is the closest description we could offer regarding our reactions to Ariel's episode.

The episode also took us back to a 2006 lecture by the first author, delivered to early childhood students and teachers in Guyana. The lecture explored the common

underpinnings for the non-consultative status childhood is often assigned and presented arguments in line with Christensen and Prout [19] that children can actively create and make meaning of their complex social world. Additionally, ethical principles and appropriate methods for addressing challenges faced when capturing children's thoughts are highlighted. Ultimately, some light is shed on "why" conversations, through children's eyes, could prevent predicaments such as Ariel's.

## 4. The first author's lecture of 2006: An abridged version

### 4.1 Childhood thoughts and reasonings in navigating their worlds

Adults who have worked and are still working with young children would agree that the work of great historical and potential significance that influenced our conception of childhood has been that of developmental psychologists. The fundamental views of these psychologists, in particular Piaget, are one of incompetence [20], where children were constructed as "human becoming" rather than "human beings", a status not fully deserving of adults' consultation [p. 4]. Nearly 15 years ago, the lectures in Child Development that formed an essential part of my teacher training in Guyana emphasised this notion of "human becoming". But I knew many Guyanese children were not like this. From my classroom observations, children can think, reason, and make sense of the world in which they live. Similar observations have been confirmed for almost 40 years by distinguished developmental psychologist Margaret Donaldson [21], who found that younger children are capable of the logical reasoning that Piaget, for example, asserted occurred at a much later stage, emphasising that children's true competencies are revealed only in situations that make sense to them. Therefore, even if evidence continues to confirm that younger children depend on more concrete experience, while older children can draw on abstract concepts [22], there is now a realisation that young children are not lacking or incomplete but are people capable of making meaning of the world from their own experiences [23].

An example that shows that young children can grasp sophisticated ideas both intellectually and emotionally is given by a renowned child rights advocate, Alderson [24], of an aged four girl who self-monitors and administers the drugs needed to control her blood sugar level while enjoying the company of her friends as they munch candy bars. Children excelling at adult-like practical work where, for example, they support their family's income and responsibilities by working either in or outside of the home further attests to their capabilities. In Bolivia, Punch [25] found that once children attained age 5, their household work roles increased, and they often performed without questions or hesitation, "readily accepting a task and taking pride in their contribution to the household" [p. 103]. Mayall's [26] study of the daily lives of 9-year-olds in the UK and Finland reveals that Finnish children manage their daily lives by engaging in tasks like waking themselves, making their breakfast, and walking or riding to school. While these were rarely reported in the UK [27], such abilities exist (though on many occasions, these "competencies were gained more by default than desire and were self-thought rather than learned positively from others" [p. 244]. On interviewing children in the UK who have been in care for about 10 years, the following was reported of one Scottish child:

> *I've learnt how to take care of myself ... [from] the age of five really. ... I'd get home from school ... and cook the dinner, do whatever, put on the washing ...and I would*

> *get down to the pub and sit in the pub until [my mother] was finished in the pub and then go home with her … ([27], p. 242).*

Though research of this nature has yet to be published in Guyana, observations reveal a similar situation. In some rural areas, for example, children as young as six go fishing and crab-catching at night, being very careful not to get bitten or lost. Among the urban population, children work in car washes, operate as porters, and sell on the streets. In analysing the ability and understanding of children in similar situations, Alderson [24] claims these findings suggest that young children could be consulted far more about everyday decisions.

Unfortunately, young children's capabilities of co-constructing their world with caring, familiar others and participating in the creation of knowledge have not yet been fully endorsed [28]. If children's ideas had been solemnly considered, it would have been realised that many of the stressors young children faced could have been minimised [26]: "School is boring. It lasts six whole hours and 30 minutes. …When I walk in the school gate at 10 to 9, I feel tired. When I walk out of the gate at 3:30, I feel happy…" (9-year-old boy) [p. 78]. Concerning very young children, findings from three countries (England, Wales, and Scotland) confirm that a considerable lack of respect is often meted out to them [28]. In the media, for instance, the statements of young children are often used to decorate, and the way they communicate and what they communicate is more often seen as cute, funny, or obscure rather than as intelligent, insightful, or challenging [28]. Children's life stage is often used against them to overshadow their skills, abilities, and potential to be involved in and make decisions about matters relating to them [28].

### 4.2 Adults as listeners, consultants, and co-constructors

The positive effects that could be derived from listening to children are remarkable. Research has shown that information about children's own views and experiences serves as a powerful catalyst for changes, ranging from the implementation of policy decisions at both local communities, national and international levels to the development of individual children's self-worth [24, 28–30]. To show the value of listening to and intentionally consulting children, I will first illustrate the effects of not consulting and permitting them to share their views or not allowing them to explore, experiment and make choices.

I begin with Alderson's [24] classroom example:

> *[T]he termly report for five-year-old Nicola, who reads to herself for hours for pleasure at home, criticised her for starting with great enthusiasm but then "running out of steam", a tellingly mechanical image. At first, she said fervently: "I love school", but after a few weeks, she said sadly: "You do lots of hard work, and you go and ask Miss Mallam if you've done enough, and she says, go back and do some more" ([24], p. 60).*

In Aldgate and Bradley's [31] study of children's anxieties about being in short-term accommodation, they note that one reason for high anxieties was when children did not understand why the placement was necessary nor had an opportunity to put forward their views about the arrangements. Consider the responses of one child when asked about his social worker [27]: "Social workers are a pain…. They come in, they sit down … They try and say, 'well, foster care is the best for you'. How do they know that?" [p. 249].

A fascinating anecdote about the effects of not considering and eliciting children's views was revealed by a young man whose mother worked with Piaget in Geneva. Aubrey et al. [32] report:

> *Because the mother was so used to logging children's behaviour, she kept many notebooks of observations of her son... and, on his fourteenth birthday, presented him with "his life" (the notebook)... The son related that while he did not demur at the time, he was, in fact, very hurt and angry; this was not "his life" ([32], p. 162).*

Similarly, Freeman [33], in his article entitled Children's Rights 10 Years after Ratification, relates his childhood with parents who thought they knew best:

> *I remember as a 10-year-old being moved from one school to another and not even being told that this was going to happen until a new uniform was put out the evening before! My parents thought I'd be happier at the new school, or so, at least they rationalised. It does not have to be this way ([33], p. 102).*

The examples of the experiences of these children may be considered trivial and inappropriate to generalise. However, considering that much empirical data is not yet available on the effects of "not" listening to children's voices and consulting them about matters affecting their worlds, these examples make it possible to speculate that more intensive research might produce widespread dilemmas similar to those faced by children in Morocco. These children lost their jobs because they were featured in a TV programme that highlighted the presence of child workers in a factory [34]. Paradoxically, the children did not accept that work was necessarily harmful or exploitative; for many of them, their contributions were essential for the survival of the family or for attaining skills that would be valuable in their adult lives [35].

Comparing these experiences to others, which involve open discussion with children, demonstrates the potency of children's voices. Beginning with the UK, some overwhelming findings are shared by researchers in Alderson [36] about how children as young as 3 years could plan the layout of their neighbourhood. Hyder [37], in reporting how children's views were influential in government policies such as physical punishment and health service upgrading, concludes that developments in these areas would have been less favourable had it not been for the views of children. Another example reveals that in Kenya, participatory methods where children with HIV/AIDS were involved in researching, planning, implementing, monitoring, and evaluating services for themselves and their peers helped to make services more effective [30]. Still focussing on Africa, Griesel et al. [29] action research project with children as young as 10 years in Johannesburg (aimed at gaining an understanding of children's environmental interests) resulted in the formulation and implementation of an action plan to resolve issues, such as potable water, sewerage and sanitation.

There are concerns that the changes resulting from consulting and working with young children are usually one-off and small-scale or seen as little gain, considering the time and effort invested [28], nevertheless, the critical point is that messages from children are powerful. According to Aubrey et al. [32], being told repeatedly that babies and young children cannot understand or do very much becomes a self-fulling prophecy, embracing an era for upholding the United Nations Convention on the Rights of the Child:

> *States Parties shall assure 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.… (Article 12). States Parties recognize that a mentally or physically disabled child should enjoy a full and decent life, in conditions which ensure dignity, promote self-reliance and facilitate the child's active participation in the community.… (Article 23).*

The engagement with the research evidence thus far shows that many stakeholders and development partners have welcomed consulting and asking children and young people about their views on different aspects of their lives. For instance, the theoretical underpinning of Clark's [38] Mosaic approach (discussed in more detail below) is one that "acknowledges that children (aged 2–4) have important perspectives to contribute about their lives" [p. 142]. Though always aiming to work for children's best interests, Save the Children added a dimension to their objectives [37]: "working with children and not for them" [p. 312]. Many other organisations are acting in a similar vein [39] (examples, A Voice for the Children in Care; Barnardos; Children's Express; NCH Action for Children), such that their work has come to be described as what might be termed "the children's rights movement" [p. 6]. That said, the latter might be easily mistaken as a well-accepted norm. This is not the case; children continue to be viewed as incapable and incompetent [20].

This prevailing concept might result from a situation similar to Priscilla Alderson's [24] experience of writing her book Young Children's Rights, which was compared with peeling away the layers of old thinking. Alderson [24] contends that accepting children as capable and competent is easier with the dried, thin outer layers, but as one goes deeper into every day and subconscious, it becomes much harder to be aware and willing to let go of old views of childhood and to try new ones. Being a tedious and sometimes painful process, many adults working with and caring for children may continue to base their practice on their own and others' preconceived notions of what young children can and cannot do [40]. However, guided by ethical principles, it is hoped that this process of new thinking will hasten.

### 4.3 Considering ethical engagement principles, methods, and practices

Dahlberg and Moss [23] discuss ethical approaches for preschool settings, describing ethics as "how we do or might relate with the 'Other' in a way that is respectful of alterity" [p. 13]. This definition illustrates that children should be heard without exploiting them, protected without silencing and excluding them, and pursue rigorous inquiry and conversations without distressing them [30]. Ethical practice includes sensitive methods, processes, and systems for discovering children's views and meanings [30].

The methods, processes, and systems of considering children's views, though, are double-edged [24]: "If this … is taken to mean children's rights 'to do whatever they want', 'to divorce their parents' or 'to refuse to go to school'…, even expressing a view or being informed, is easily dismissed as dangerous nonsense" [p. 114]. In a similar vein, Aldgate and Bradley [31], analysis of children's complaints about the abuse of power by adults over the decision for their short-term accommodation, warn: "It is as much an abuse of power to set children up to make spurious choices as it is not to ask them for their views" [p. 76]. It might, therefore, be appropriate at times to override young children's expressed choices since all people have to accept that there are inevitable boundaries to choices and young children are no exception [41], an idea that children themselves agreed with in discussions on curfew and decision-making [22].

The implication of this choice boundary, however, is that some adults use it to prevent the voices of many children from being heard, arguing that children will make mistaken choices because they lack experience [39]. Describing this situation as a "catch-22," Franklin [39] questions how children will ever get started if they are not allowed to make decisions and contributions based on the notion that they have no experience.

Ethical, practical, and developmentally appropriate methods and practices for involving children in matters relating to themselves and for promoting their capabilities include:

- Gathering children's views by using fun and interactive methods, such as art and drawing, group games, and puppetry used in Save the Children projects [37];
- Talking with them, asking them to take photos and make diaries, maps, and videos about their daily life [30];
- Observation, child conferencing, using digital cameras, tours, and role play [42];
- Interviewing children with friends of their choosing and in groups [26];
- Informal chats on children's thoughts [43]; and
- Providing children with information leaflets at the start of projects [36].

These participatory approaches should not be estimated in terms of simplicity [44]; they involve problems of power, age, ability, ethnic, and gender inequalities between the children and young people involved, as well as between adults [30]. Take, for example, the following question of a girl engaged in a discussion about a new local youth forum (Morrow, 2001, in [30]): "...they'd choose the people who do all the best in school and everything, and they're not average people, are they?" [p. 65]. Similar findings were reported by Willow [28] after analysing her one-year mapping exercise of the participatory methods used with under 12-year-olds in England, Wales, and Scotland. She states: "Parents, head teachers ... may volunteer certain children to take part in an activity... because they think they will be able to contribute more than their peers" [p. 25]. Among the groups that most frequently experience this inequality are the very young and disabled, as confirmed in one researcher's own work surrounding children's daily life experiences [26]: "I remember thinking that it might be difficult to work with pre-schoolers .... So I planned to move slightly up the age range..." [p. 14].

It is worthwhile here to acknowledge Jones's [35] warning about involving young children in decision-making because they are "a particular kind" [p. 123]. For example, adults should not simply focus on engaging and consulting bold and articulate children; children's abilities are particular to the childhood they experience [23]. The challenge for adults working with and caring for young children is to be inclusive, respectful, accommodating, and open-minded.

Clark's [38] mosaic approach addresses the challenges and concerns identified. According to Clark [38], the mosaic approach "plays to young children's strengths rather than weaknesses; harnesses young children's creativity and physical engagement with their world; allows children with different abilities and interests to participate" [p. 144]. It also enables adults to listen to the children's perspectives through a forum where children are given many different opportunities to express their views

and experiences—an opportunity that one child took advantage of as he drew the conferencing session to an early close in one study [42]: "I've done enough talking now" [p. 61].

The most outstanding feature of using this approach is that it moves beyond the spoken to capture the complexities of the everyday experiences of young children [38]. Such an approach also works as it takes account of children's familiarity with the other (buildings, people, language, and resources) [40], making it ideal for use with the frequently "discriminated against and hard to recruit" and "seldomly heard" groups [30]. Overall, the mosaic approach provides equal opportunities for obtaining high-quality information that is not otherwise available, invoking Malaguzzi's famous expression, "the hundred languages of children" [23]: "...The child has a hundred languages ..., a hundred thoughts, a hundred ways of thinking, of playing, of speaking ..., of listening" [p. 99]. On this note, I end with the views of children who were involved in a consultative project that used child-friendly methods [29]: "We enjoyed being asked questions, playing games, drawing, and talking.... It taught us that as children we have the right to give our opinion..." [p. 285].

### 4.4 Lecture wrap-up

This lecture, which has attempted to show that it is crucial to listen to children, did not only unravel studies to substantiate this view; the misconception that young children are just "human becoming" was strongly challenged, illustrating the rationalisation for the implementation of one of the world's most comprehensive bill of rights—the United Nations Convention on the Rights of the Child [41], emphasising the right for children's voices to be heard (Articles 12 and 23). What is also evident is that listening is more than simply hearing; listening involves following through with active responses that produce some change [44]. Listening to children, though, and considering their views raise ethical issues, such as respecting and consulting them about decisions and matters affecting their lives. At the same time, it is emphasised that listening does not mean adults do not have any role to play in children's decision-making or that children do not wish adults' intervention in matters concerning them [22]. Instead, the adults' role is revised to the status of a co-creator rather than merely a transmitter or director of knowledge, and this status effectively enables the voices of society's youngest members to be heard.

## 5. Methodological considerations surrounding our interpretations

This study included communication with seven-year-old Ariel from Guyana, who is knowledgeable and psychologically affected by the COVID-19 pandemic. The stories of Ariel's lived experiences became the raw data to be explored, analysed, and understood as we explored this young child's decision-making processes and cognitive patterns during the COVID-19 pandemic. This makes the qualitative descriptive approach most appropriate because the data gathered and analysed reflected a child's narration and voiced experiences and those who reflected on these experiences. Using a qualitative descriptive approach makes it easier to comprehend the phenomenon of interest, events, or difficulties as experienced, lived, or interpreted by participant(s) [45].

Specifically, a narrative inquiry was the suitable qualitative research approach for demonstrating our interpretations. As proponents, Clandinin and Connelly [46] explain, narrative inquiry involves gathering and analysing stories to understand how

individuals interpret their experiences. In other words, the critical role of researchers undertaking this method is to study the stories people tell one another about their experiences [46]. Utilising a qualitative research method with a specific reliance on a narrative inquiry facilitated a reflexive engagement with the data in its raw form (Ariel's voice) and the interpreted form (Ariel's voice analysed through theory and related experiences). The narrative inquiry approach allowed for a deeper conversation with the data on various elements of Ariel's experiences.

Raw data was collected through observations and unstructured interviews, facilitated through interactions between Ariel and her aunt and uncle. Unstructured interviews are a natural extension of participant observation because they often occur as part of ongoing participant observation and conversation [47]. Like other researchers [48–49], we respected Ariel's childhood, so conversations were extended to circumstances beneficial to Ariel, evolving her decision-making skills as well as developing psychological coping skills. Focusing on Ariel's actions, emotional expressions, and interactions with family members regarding COVID-19 precautions suggests that overt participant observation was utilised. Overt participant observation involves the researcher being open with the participant studied [50]. Ariel's aunt was guided in being transparent with Ariel.

The data was then aligned to the literature about "childhood thoughts and reasonings in navigating their worlds", using guidelines for theme analysis [51] by reviewing the transcribed experiences, coding the transcripts, and developing themes that captured the narrative meanings derived from the data. This study was guided by the British Educational Research Association's [52] ethics to ensure Ariel's comfort and safety. Several ethical procedures were followed, including obtaining informed consent from her guardians, preserving confidentiality by anonymising identifying information, and maintaining a child-centred approach throughout the data collection process.

## 6. Returning to Ariel: What did we learn?

We have agreed that, to some extent, the aunt and uncle embraced the United Nations Convention on the Rights of the Child: "States Parties shall assure 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…." (Article 12). The non-restriction and non-redirection of Ariel's concerns resulted in an illuminating story. She knew how she felt about COVID-19, how she could be perceived by others who may witness her coughs, and the impact of these perceptions. The weight of her views was then a matter for the aunt and uncle to consider. Ariel outlined a workable proposal for shortening physical socialisation at church: "You mussin preach so laang again [You must not preach so long again]". The aunt and uncle also responded to and engaged with Ariel respectfully: "I don't like to wear masks either. But we need to wear masks to protect ourselves from the covid". Considering the overall episode, we reasoned that the engagements between Ariel and her aunt and uncle align with previous researchers [30] that children should be heard without exploiting them, protected without silencing and excluding them, and pursue inquiries and conversations without distressing them.

We have come to realise that Ariel's dilemma could have possibly been prevented or managed differently. For example, the "near death" incident, as she describes it, may have been prevented if her aunt or uncle had conversations about the likely

scenarios Ariel could find herself in during the pandemic or at least consulted her meaningfully about her feelings regarding church attendance during the COVID-19 pandemic. Taking Ariel to church without more focussed conversations surrounding her views and feelings about attendance reminds us of what Alderson [24] has to say about some people's perception of adulthood and childhood: "'Adult' tends to mean competent, informed, wise, altruistic, and reliable and 'child' to mean incompetent and unreliable" [p. 63]. Permitting children to navigate and co-construct their worlds is necessary for counteracting views that they are incapable and incompetent [20].

Ethical and developmentally appropriate methods and practices exist to support the kinds of engagements needed with Ariel. Involving children through art and drawing, group games, puppetry, informal chats, and child conferencing are practical, developmentally appropriate and ethical methods and practices for involving children in matters pertaining to them and promoting their abilities [38, 43]. The narrative of Ariel serves as a powerful example of how these tactics work and why they are essential and practical. Ariel demonstrates her capacity to comprehend and adapt to her intricate surroundings through her proactive involvement during the COVID-19 epidemic. For instance, her stance on the importance of masks and hand sanitiser aligns with the participatory method that advocates for children's thoughts and actions to be valued and included in everyday activities [30]. The comment by Ariel, "Me an all to! [Me too!]" demonstrates her understanding of health regulations when she added: "So I don't have to wear mask and sanitise meh hands steady, steady, steady [That way, I don't have to wear a mask and sanitise my hands so often]". This demonstrates how meaningful involvement can encourage children to participate actively in vital health measures.

In Ariel's interactions with her aunt and uncle, we observe the practice of acquiring children's thoughts through informal discussions, as described by Brooker [43] in the uncle's comments to Ariel's statements about difficulty breathing: "I don't like to wear masks either, but we need to…" To avoid contracting the COVID-19 virus, Ariel understands her uncle's explanation about why masks must be worn. This encounter shows how children's worries can be validated and how important it is to listen to them while also giving information that can help them develop emotionally and cognitively. Furthermore, Ariel's comprehension and ability to cope with the pandemic could be further improved by utilising techniques like child conferencing and role-play [42]. To adequately prepare for her church experience, Ariel might have practised various situations with her family regarding what to do in the event that she feels the need to cough. Involvement in decision-making on a daily basis helps young children navigate their environments better [24].

The comment: "A waan kaaf, but I en waan people think a gat Corona. [I would like to cough, but I don't want people to think I have COVID-19]" suggests Ariel's anxiety about public coughing, highlighting the psychological stress and stigma that come with COVID-19 symptoms. Emotional health practices that are age- and stage-appropriate are especially important in light of this concern. The family may have helped Ariel cope with her anxiety by talking to her and giving her practice scenarios, which is an example of how engaging tactics may be applied in real life. In addition, children in Ariel's circumstance can find a secure space to express themselves through art, drawing, group activities, and other creative methods [37]. For example, Ariel could have used art or role-playing games to express and cope with her emotions over the new church rituals and mask-wearing practices. While guiding children within safe and fair boundaries, it is crucial to respect their ideas [41]. By listening to Ariel's worries and explaining the rationale for mask-wearing, Ariel's aunt and

uncle exhibited this equilibrium and helped Ariel develop a feeling of autonomy and self-esteem. Consistent with the ideas put out by Alderson [24] and Morrow [22], this method is fundamental for children's general growth and development.

Reflecting on Ariel's stern stance for the elimination of COVID-19, in her response, "I kaan [can't] wait fu [for] this covid to be over!" it could be argued that she mapped in her young mind, ways, and means of how it can be accomplished. The principal means was adhering to instructions and ensuring others around her do the same. This aligns with the contention that children take pride in their contributions and readily accept tasks [25]. This was noted in Ariel's discourse as she asked for sanitiser and kept on her mask even though she stated she felt like she could not breathe. More so, Ariel's acceptance of tasks mirrors the 2020 World Health Organisation's agenda of ensuring everyone follows the instructions by sanitising and wearing a mask, especially in public spaces [1]. Notwithstanding, Ariel, like many other children, was thrust into the mandated regulations and coerced into following guidelines without considering their perspectives on the plan, its implementation, and the monitoring and evaluation. As a result, the exclusion of children's input, in this case, Ariel, saw her becoming undecided in her options and debating what she could and could not do. In addition, her perplexed mind sometimes led her to doubt and despair. This was evident when Ariel wanted to cough; she was so distraught that tears settled in her eyes, and her complexion changed from light brown to red. Then, when she was given the approval by the adult (aunt) to cough freely outside, she was doubtful and cautious in exhibiting the natural reflex of coughing in fear of being considered a carrier of the virus.

Considering Ariel's dilemma draws attention to the position that when children are involved in planning, implementing, monitoring, and evaluative services, it can be more effective [30]. In Ariel's case, involvement in the process may have avoided her initial worried persona. The exclusion of Ariel from the planning, implementing, monitoring, and evaluating process opposes the view that young children can grasp sophisticated ideas both intellectually and emotionally and excel at adult-like practical work [24]. If Ariel had been allowed to be involved in the process, she could have been aware of the do's and don'ts regarding mask-wearing and could have exhibited confidence in stepping outside to cough freely. However, Ariel's need to cough was met with apprehension and dismay that people would assume she was sick. If Ariel had been consulted and given opportunities to participate in the process, her reactions to her dilemma may have been different.

On a positive note, Ariel's predicament shows how suggestions could transform into reality. Listening to children, taking what they have to say seriously and helping them turn their thoughts and suggestions into reality help them in the planning process. Such opportunities help children to get over their ideas and assist the adult in understanding what affects or interests the child from a child's perspective, which eventually develops into a practical plan with meaningful learning experiences. When Ariel suggested that her uncle preached very long and that he should not do so again, it allowed the uncle to listen and understand what affected her, possibly enabling the uncle to plan more effectively since it was COVID-19 time and she wanted to go home.

## 7. Conclusion

To conclude, we return to our initial reaction to Ariel's situation—an outburst of laughter. Our initial reaction is consistent with findings [28] that the way young

children communicate and what they communicate is more often seen as cute, funny, or obscure rather than as intelligent, insightful, or challenging; "their life stage is often used against them" [p. 32]. Upon deeper consideration of Ariel's concerns, instead of laughter, we are left with some questions: Did the two and a half hours spent in the church that day result in Ariel's association with the church and psychological stress? Does the sight of or wearing masks trigger unpleasant emotions and anxiety? Will Ariel overcome the fear of the natural and involuntary reflex of "coughing"?

Regardless of the answers to these questions, exemplified in Ariel's story, is the philosophical stance that children have praxis, which mediates between their individual wishes and the collective interests of groups such as their family or classmates [53–54]. While Ariel shares the resemblances of a collective conscience with her aunt in some matters, her individuality stands out in her assertiveness and confidence. There is adequate autonomy in the way Ariel experiences life events, expectations, and her own desires. The autonomy is more dominant in the way she socialises. We dare say her autonomy could be classified as an exceptionality that paves the platform for her to be consulted in critical matters beyond the daily routines and mundane.

## Conflict of interest

The authors declare no conflict of interest.

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Chapter 10

# Perspective Chapter: Slow Pedagogy Approach vs Hurried Schooling in Early Childhood

*Eleni Mousena and Nikolaos Raptis*

## Abstract

It is commonly known that preschool children are interested in exploring the world and learn by playing freely and experimenting. On the other hand, it is necessary to organize learning systematically so that young people acquire knowledge, skills, values, and attitudes required for life in today's rapidly changing and demanding environment. Nowadays, there is an intensification of school learning, the starting of which is increasingly being shifted to younger ages, a phenomenon that is described in the literature as the crisis of kindergarten. On the basis of the reflections on the intensification of education, this chapter analyses the approach of "Slow Science - Slow Pedagogy Approach", as a movement that supports students' meaningful, dialectical, reflective, and enjoyable understanding of the world and that contributes to the promotion of their creativity and well-being. The reasoning of the essay is based on the meaning of the Slow Science Manifesto.

**Keywords:** intensification, preschool, curriculum, meaning, slow pedagogy approach (SPA)

## 1. Introduction

The current conception of the child is formed by perceiving the child as a capable individual, with aptitudes and interests, will, energy, curiosity, voice, and his or her own rhythm, which, along with all other characteristics, needs to be understood and respected. Jean-Jacques Rousseau highlighted the particular nature of the child, his or her inherent curiosity and propensity to explore. He saw a capable child who deserves attention and proper education through literacy, cultivation of autonomy, individualized education, and child-centered mode.

The most basic right of children is the right to be children, to enjoy, to rejoice, to express themselves, and to have their own rhythms, a right that is threatened by the intensification of their lives today. Moreover, in the Convention on the Rights of the Child [1], Article 31 defines the right of children to rest and leisure activities, to engage in age-appropriate recreational games and activities, and to participate freely in cultural and artistic life. The spirit of the legislator in Article 31 was to limit child labor and to ensure age-appropriate rest, recreation, and cultural expression activities

for children. Knowledge is a universal common good and a recognized right guaranteed through free primary education.

The development of early childhood institutions has a "long durée" [2], which starts from the enlightenment and the emergence of childhood as a stage with particularly important and dynamic characteristics, which deserves attention and appropriate support. Access to quality early childhood education and care services is promoted by recommendations from international organizations, with a focus on developing structures and programs that also meet the needs of families. The debate on the benefits of compulsory preprimary education is open and is based on the way and the quality criteria by which it is delivered. The quality criteria refer on the one hand to the level of structures, such as premises, equipment, conditions and operating hours, the ratio of children per educator, etc., and on the other hand to the level of processes, such as the philosophy underlying the development of the program, pedagogical practices, routine activities, transitions from one phase of activity to another, child-centeredness as a principle, respect for the nature of the child, and his or her personal and social identity [3]. The Organization for Economic Cooperation and Development (OECD) underlines that increasing accessibility does not benefit when the conditions of the quality criteria are not met [4].

The main aim of this chapter is to analyze the Slow Pedagogy Approach, as a movement that supports students' meaningful, dialectical, reflective, and enjoyable understanding of the world and that contributes to the promotion of their well-being.

## 2. The nature of learning and the intensification of early education

It is a fact that children are interested in exploring the world and learn by playing and experimenting. The learner is in a relationship with his or her environment and processes. "A relationship with knowledge is a relationship of a subject with the world, with himself and with others. It is a relationship with the world as a set of meanings, but also as a space of activities and is inscribed in time" [5]. Learning requires time and its relationship with time is ongoing, never ending, as it falls within the processes of ontogenesis and phylogenesis that define it. The constant search of a guessing subject is the meaning of things and the world around it. This refers to the question of pedagogical practices that are meaningful to students. For organized school learning, the source of cognitive processes is action; children are activated, act and learn.

From Plato's legacy, we know that children do not need to be forcibly accelerated in their learning but to be supported in an interesting and pleasant way, "Μὴ τοίνυν βίᾳ, εἶπον, ὦ ἄριστε, τοὺς παῖδας ἐν τοῖς [537a] μαθήμασιν ἀλλὰ παίζοντας τρέφε, ἵνα καὶ μᾶλλον οἷός τ' ἦς καθορᾶν ἐφ' ὃ ἕκαστος πέφυκεν". (Never then, my good man, never use violence [537a] in children's lessons, but rather see to it that they are educated by playing, so that you too may be better able to discern the natural disposition of each one.) [6]. Play is described as an extremely important process of mobilizing body and mind, and therefore a way of learning and enjoyment for children. Play is defined as a source of pleasure. It is a general phenomenon or natural manifestation observed throughout the animal world and in humans, especially in developing humans. It manifests itself freely, spontaneously and effortlessly as an irresistible inner urge for free movement and action, individually or in groups. It is a fundamental characteristic of childhood, which manifests itself in a variety of forms and has immeasurable positive effects. The main characteristics of children's playful activity outline basic patterns that are also followed in the process of scientific research, such as

observation, question/hypothesis, testing and data collection, data analysis, drawing conclusions, and communicating the results.

Self-directed play is characterized by dedication to purpose, discipline in the process, and satisfaction in learning. Learning through the process of play is experiential and leads to understanding. It is enjoyable because it meets the need for curiosity that is in the child's nature and tries to meet it through play. When children play, they are constantly alert and in successive problem-solving situations. They make decisions, they put them into practice, and they see the results of their tests, redefine their action, and try again, involuntarily and deliberately. This process is not imposed on them; it is their own expression and they are satisfied without satiation through their play. Children invent solutions through play. On the other hand, in the process of acquiring social skills, they manifest the human tendency of imitating others, and through imitation play, they learn social roles. Very important in the process of education is social interaction and also, the cultivation of language and other kinds of literacy, the liberation of thinking from concrete reality, and the construction of concepts and the conception of ideas. Ideas are not unexpected epiphanies, but the culmination of a process of collecting and organizing information. "The skills and the conditions that are required for these ideas are rooted years before, in our early childhood" [7]. The state of rest and "boredom" during seemingly inactive time unconsciously functions creatively, rearranging data, capturing ideas, and inventing solutions. It is a crack of light for ideas to pass through and come to light. It is a moment of "Eureka!" Ideas are creations of mental process and they are generated when the mind is not extorted. As we will see in the next section, the Slow Science Manifesto underlines "science takes time to think" [8]. A key prerequisite for such a process is effortless time for thought to mature and pay off. "Extraordinary abilities and unusual opportunities are not necessary conditions for preschoolers to develop into adults with ideas. Far more important are simply the time and attention that the child gives-and is encouraged to give-to the processing of ideas" [9].

With the development of preschool institutions, concerns are now being raised regarding the intensification of preschool education and the pedagogical approaches adopted. School causes stress in children, in order to foster competition. Some factors as class size, the variety of events and activities that take place, the limited time for meaningful classroom discussion, and the targeting curriculum cause stress in children. David Elkind speaks of the "hell of rushing" in school today, which takes the form of contractual violation [10]. The way in which children perceive acceleration depends in part on their level of cognitive development, their temperament, and previous experiences. "Children aged 2 to 8 years tend to perceive rushing as rejection, as evidence that their parents do not really care about them. (…) We tend to assume that children are like us in their thinking rather than in their feelings. But in fact, the opposite is true: children are more like us in their feelings than in their thinking" [11]. We need to respond to their feelings and try to reduce the stress caused by the rush and intensity of today's way of life.

The intensification of school learning and its starting at younger and younger ages is recorded as a phenomenon from the mid-twentieth century onwards. Research entitled "Crisis in the Kindergarten" noted that kindergarten in the United States had changed in recent decades and that developmentally appropriate learning practices centered on play, exploration, and social interactions had been replaced by highly prescriptive curricula, test preparation, and a clear focus on developing academic skills. The same study called for "a reversal of the downward push in curriculum that has transformed kindergarten into a de facto first grade" [12].

A 2014 study by a University of Virginia research team posed the central question, "Is Kindergarten the New First Grade? The Changing Nature of Kindergarten in the Age of Accountability". The researchers in the above study emphasize that kindergarten today is characterized by an increased focus on academic skills and a decrease in opportunities for play. There are significant changes in each of five dimensions: (a) teachers' beliefs about school readiness, (b) time allocated to academic and nonacademic subjects, (c) classroom organization, (d) pedagogical approach, and (e) assessment practices [13].

How to educate early childhood children is an area of controversy. Research data present the benefits and risks of orienting early childhood learning more toward academic content [10, 14, 15]. Furthermore, it is argued that exposure to academic content in kindergarten (and especially exposure to advanced content) can be beneficial for children's learning [16, 17]. In other research, it is emphasized that focusing heavily on academic content is not appropriate [18–20].

## 3. The slow pedagogy approach (SPA)

### 3.1 Slowness

The Slow Approach is a broader movement that developed at the end of the twentieth century and embraces all aspects of human activity, from biological needs to intellectual needs and the way of self-actualization. The Slow Approach is a response to the speed and variability of modern life. It includes wellness, meditation, simplicity, creativity, mindfulness, and complexity. It promotes balance, reflection, and liberation [21].

In 1980, the journalist Petrini criticized the opening of McDonald's fast-food restaurant in Rome because of its commercialized, industrialized, and standardized approach to food. This created an international current aimed at preserving good local cuisine. The Slow Food movement led to the general trend of Slow Living, "Slow Living means structuring your life around meaning and self-fulfillment" [22]. Being Slow means controlling the rhythms of your life. You decide how fast you need to go in any given context. If today I want to go fast, I go fast; if tomorrow I want to go slow, I go slow. What we are fighting for is the right to set our own pace [23].

The Slow Approach is spreading to various aspects of life. It emerges as a necessity in containing the hyper-rhythms of contemporary life and its manifestations have emerged as Slow spaces [24], Slow looking [25], Slow scholarship [26], and Authentic/Socratic dialog [24]. The spread of the Slow Approach to various aspects of life and doing in the world led to the creation of the World Institute of Slowness, an approach to Slow Planet, and a need to teach the world an effortless, meaningful and pleasurable, mature, reflective, and qualitative way of approaching life and knowledge, with a focus on Effortless Education [27]. To be slow in learning does not simply mean to delay without reason, but to be patient, to take the time necessary to discover meaning, and to deepen and reach understanding. The meaning of the Slow Pedagogy Approach lies in the quality of knowledge and process; it means learning and the acquisition of knowledge are not superficial, but deepening, experiencing the satisfaction of the search for meaning and reaching understanding. This requires time and respect for the process. Intensifying education does not fulfill the above condition.

Young children engage in learning and seek meaning with patience and ingenuity, but how do adults and schools address the learning process? Nowadays, there is an

intensification of school learning, which is increasingly transferred to younger ages. This documented reality is causing concern and the voices of scientists and thinkers are intensifying, which are creating a new movement in Pedagogy Science, that of Slow Pedagogy.

### 3.2 Slow science - slow pedagogy

The Slow Approach to science supports the importance of taking time to plan, fail, retest, and reflect, in the context of critical and effective learning. As highlighted in the Slow Science Manifesto, published by the Slow Science Academy in Berlin, "We are scientists. (...) Science needs time to read and time to fail. Science develops erratically, with jerky movements and unpredictable leaps forward. (...) Effortless science was pretty much the only science that could be seen for hundreds of years - today, we argue, it deserves to be revived and needs protection" [8]. The meaning of Slow Pedagogy Approach is rooted in the dictum "Science needs time to think" of the above Manifesto. Sufficient time is needed to cultivate knowledge. The pedagogical approach of effortless learning sees time as an ally instead of an adversary, respecting the nature of the child, his time, his interests, and his right to play and knowledge.

The Slow Pedagogical Approach developed as a kind of response to the standardization and homogenization of education [28]. "A process by which everyday life - in all its rhythm and complexity, disruption and routine - is approached with care and attention (...) an attempt to live in the present in a meaningful, sustainable, reflective and enjoyable way" [29]. The extreme intensification of systematic school learning, both in terms of processes and goals, increases levels of anxiety and school stress in children, destroys their childhood and compromises their well-being. The emphasis on taking time to slow down points to an implicit critique of the dominance of the speed culture [30].

The intensification of schooling and the pressure on children from very young ages to achieve academically, and the emphasis parents place on it, has caused the creation of "academic hot-housing" [31], while at the same time leading to the Slow Parenting movement. This movement promotes giving children adequate time and space to explore the world on their own terms but also respecting what they want to become. Children learn best when they learn at a slower pace [32]. According to Holt, "The pressure to move the child from one level of targeting to another as quickly as possible, to absorb and demonstrate specific knowledge with conveyor belt precision, is a compelling fact of school life. Parents are encouraged to focus on achievement, not self-actualization" [28].

The value of dialogical discussion is largely demonstrated through this approach. The curriculum is developed dialogically [33, 34]. Questions in dialogic teaching are structured in such a way "to elicit thoughtful responses, which in turn ideally elicit further questions. This serves to create a coherent course of inquiry" [35]. The Slow Pedagogy Approach focuses on self-realization. Creativity, critical thinking, resilience, motivation, perseverance, humor, trustworthiness, enthusiasm, political awareness, self-awareness, self-discipline, empathy, leadership, and compassion, qualities important to an individual's moral development, cannot be assessed through standardized tests. A disadvantage of the standards-based approach to education is its focus on pushing and rushing achievement rather than on the individual's self-realization [28].

The Slow Pedagogy Approach accepts technological capabilities for teaching; however, it is emphasized that decisions to incorporate technology be carefully weighed,

taking into account work/life balance, speed, intentionality, and informational and intellectual capacity. Effective knowledge acquisition for the sake of speed cannot be compared to deep engagement, regardless of the tools used [31]. Alison Clark urges less hurried adults form more calm children. She analyzes the reasons for not rushing and suggests effortless pedagogical practices [36]. In the same vein, the underpinning manifesto of early childhood action of Winchester suggests unhurried pathways, focusing much more on preparing young children for life than for school [37]. The schooling of kindergarten and the intensification of learning is very serious for children's emotional development and is a wide field of research. It is a fact that not much research has been produced on the Slow Pedagogy Approach and there is a need to explore the issue in depth to convince the benefits for children's meaningful learning.

## 4. Conclusions

In today's society of rapid change and intense activity rates, learning processes are being carried along at a similar pace. The value and meaning of play have been seen to be poorly understood as we see academic achievements increasingly dominate as values espoused by parents and promoted by educational regulations concerning children. Childhood is a stage of particular value, as the child develops in many ways and perceives the world around him or her. The demands of modern parental lifestyles and the standards promoted by the media lead to a hasty adulthood of children, which manifests itself in the restriction of play and the intensification of schooling at younger and younger ages. The child-centered approach seems to be losing ground to the curriculum-centered approach to early childhood education, which is documented in the literature as a crisis in kindergarten. Play offers children enormous possibilities for expression and learning. The logic of the saying "No more play, time to work" cannot have a place in conditions where learning is pursued, as play is a pleasant and intelligent learning condition, where the same takes place in an effortless and creative way that has long-term results. However, the intensification of education by limiting play seems to prevail.

On the basis of these findings, we have seen the Slowness movement develop, which is universal and global and embraces all aspects of action by individuals today. Both the Slow Approach to science, as articulated in the principles of the Slow Science Manifesto regarding the intensification of the production and dissemination of scientific knowledge, and the Slow Pedagogy Approach, developed to slow down the pace of school learning that compromises the purposes of education, are manifestations of the movement that advocates dedication, immersion, and understanding in the construction of knowledge that is meaningful and leads to the self-actualization of the learner. The meaning of the Slow Pedagogy Approach (SPA) lies in the quality of knowledge and process, and it means learning and the acquisition of knowledge is not superficial but deepening, experiencing the satisfaction of the search for meaning and reaching understanding. This requires time and respect for the process.

The Slow Pedagogy Approach is an idealistic, perhaps utopian, suggestion and possibility in today's age of digital speeds. What it poses is the problem of the extreme acceleration of the pace of life and education in general, starting at very young ages. It underlines the values of respect for the nature of the child, the ability to think without being forced into learning, and the readiness to learn. According to the Slow Pedagogy Approach, the pedagogical and teaching process and assessment need to be more focused and authentic in relation to the individual engaged in the process of learning and being literate.

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Section 4

# Foundations and Frameworks for the Future of ECE

Chapter 11

# Perspective Chapter: Parenting, the Christian Perspective

*Patricia Addy*

## Abstract

Parenting is a universal phenomenon and has different perspectives by different people based on faith/religion, culture and tradition, society, education and many more. This chapter focuses on parenting from the Christian perspective and the set objectives are to: (1) Discuss parenting from the Christian perspective and (2) explore parenting styles of handling wayward children. The research is a qualitative one that employed the phenomenological and theological approaches of study. Secondary data was mainly gathered from scholarly works from Christian books, journals and articles from the internet. The Bible was also referred to in most cases to provide a theological reflection on the subject of study. The data gathered was grouped and analysed under definitions, purposes, responsibilities and styles of parenting. Some findings from the research are that parenting from the Christian perspective is a process, a calling, a vehicle and a responsibility of raising children into responsible Christian adults. Parenting may have a biological or a non-biological connection. Children are part of God's creation plan and are a blessing. Wayward children could be restored through love and acceptance, prayers, pointing them to Jesus, never giving up on them and exploring solutions together with the wayward children.

**Keywords:** parenting, Christian, perspective, purpose, choice, chance

## 1. Introduction

One of the interesting tasks that cuts across cultures, religions and educational backgrounds is parenting. Parenting is a universal phenomenon and has different perspectives among different people based on faith/religion, culture and tradition, society, education and many more. Parenting has been with humanity since time immemorial, as people continue to produce after their kind and nurture them into maturity. Parenting is seen as a very complex and challenging task, especially in contemporary times. This is because most people say "parenting is a difficult job. It is tough enough to juggle the many demands of life without children; many people find giving appropriate attention and care to one or more children-on top of the already considerable responsibilities of marriage and career, a nearly impossible job" [1, p. 179]. Over the years, however, people have managed and handled this tedious task of parenting in such a way that many more have desired to parent children despite the challenges associated with it.

## 2. Working definition

### 2.1 The Christian perspective

The Christian community is made up of people who believe that they are born of God through their professing faith in Christ Jesus as Lord and Saviour of their lives and in appreciation of the finished work of Jesus Christ for their lives through his suffering, death and resurrection, live their lives worthy of their calling as children of God through the leading power of the Holy Spirit who lives in them in the world. [John 1:12–13, 3:3–5,16, 18 Ephesians 2:8–9 Romans 8:14; 10:9–10]. Kudadjie and Aboagye-Mensah have this to say in defining who a Christian is;

> *It is tempting to say simply that a Christian is one who has accepted Jesus Christ as his own Lord and Saviour, and who, accordingly, lives (or endeavours to live) by God's grace a life that is in keeping with biblical teaching. Such a person has received a new life, and his interests, desires, values and outlook on life have been changed by the power of the Holy Spirit who lives in him.*
>
> *And yet, in a real sense, the Christian is more than that. For he is first of all a person. As such he has certain biological needs; he has psychological feelings; he has some peculiar likes and dislikes. All these make him a person who is different from others in important ways. Hence, he may have a peculiar lifestyle. Moreover, a Christian is not an island unto himself: he is born into a family; often, also, into a clan, and into an ethnic group. He is also a member of a race; he may belong to a professional class. Again, all these cultural and sub-cultural groups can influence his lifestyle [2, p. 1].*

Christians as children of God have a world-view or perspective on every aspect of life from cradle to grave including childbearing and parenting to make them parent their children in ways that will please the Lord and make the children grow in the Christian faith [Romans 12:2]. The Christian faith is a living tradition, that helps its members to seek "not to be conformed to the pattern of this world, but be transformed by the renewal of the mind, that by testing, one may discern what is the will of God, what is good and acceptable and perfect" [Roman 12:2] in one's life in every giving situation.

In discussing parenting from the Christian perspective therefore, we are seeking to discern what is the will of God, what is good, and what is acceptable and perfect in the sight of God regarding raising, nurturing and bringing up children entrusted into the care of the Christian through all the developmental stages of their life until they become responsible Christian adults fulfilling their purpose in life to the glory of God. The Christian parent could do this by following the standard of parenting according to the word of God which has been tested and proven to be timeless and thus transcends all generations irrespective of the changing scenes of society for all things will pass away but the word of God shall never pass away.

#### *2.1.1 Parenting in the Christian perspective is a process*

In the Christian perspective, parenting is a process of raising children into independent adults and it begins with child bearing but does not end there. The task of parenting as Christians takes its real form after the child is born into the family and society as a whole. The task of socialising and integrating the child into the family

and the community to appreciate his or her identity is part of the parenting process. Parenting as a process for the Christian also serves as the vehicle of exploring, unearthing and enjoying the blessings of God bestowed on children for the benefit of themselves, their families, communities, the church, the nation and the world at large, thereby bringing glory unto God.

However, bearing children in itself is not parenting. It is not all children who are parented biologically, because other people other than their biological mother or father may parent children through guardianship, adoption or schooling. Parenting can therefore have biological or a non-biological connection whereby the parent nurtures the child to live to unearth and live out the blessings in his/her life for the benefit of him/herself, the family, community, church, the nation and the world at large.

It is the will of God for children to be parented by both father and mother in an ideal situation as he instructs children to hear the instruction of the father, and not forsake the law of the mother, for they will be a graceful ornament on their head and chains around their neck (Proverbs 1:8–9). This notwithstanding, it is important to acknowledge that there are many Christians who parent as single parents as a result of death, divorce, adoption, bearing the child out of wedlock and sometimes rape.

### *2.1.2 Parenting in the Christian perspective is a calling*

From the perspective of the Christian, parenting either as a married couple or single parent is a calling of bearing and giving care to children through nurturing, training and teaching children entrusted in one's care either with biological or non-biological connection in order that the parent may command his/her children after God to keep the way of the LORD, to do righteousness and justice to fulfil the will and purpose of God concerning them (the parent, the child, their community and the world as a whole) as they grow to become responsible Christian adults (Genesis 18:18–19, Deut. 4:9, 10; 6:6, 7).

Christians see parenting as one of God's most important callings where the "Christian instil godly values, demonstrating unconditional love, and leading by example. Parents are called to introduce their children to God's word, nurture their relationship with God and guide them in making godly decisions" [3]. Parenting is a calling by God for parents to be good stewards of the children He has placed into their care and by that be responsible for the spiritual, emotional and physical well-being of the children placed in their care [4].

Parenting as a calling comes with a long-term responsibility for parents from the time of conception through their birth until they become responsible adults. It is an important calling that goes beyond caring and nurturing your child to become a responsible adult, it also has the fundamental goal of guiding the children to saving faith in Christ and setting them on a path to maturity, bringing them to the full measure of the glory of God (Eph. 4:13) through a responsible adult life through which they become assets to their families, communities, church, nation and the world at large bringing glory to God.

## 2.2 The purpose of parenting

Parenting from the Christian perspective has a purpose and it is very important that this purpose is known, understood and well-appreciated by every Christian parent, for it is in knowing and understanding one's purpose that one can be determined to fulfil it. Christians share the view that parenting practices should aim at

three major goals; ensuring children's health and safety, preparing children for life as productive adults and transmitting cultural values [5]. Transmitting cultural values is inclusive of the cultural values of the Christian faith where parents teach their children about Jesus both in word and in action. One can best appreciate the purpose of parenting by first understanding the purpose of God for children.

*2.2.1 Children are part of God's creation plan*

Children are part of God's creation plan to fill the earth through the multiplication arithmetic of "Be fruitful and multiply and fill the earth" [Genesis 1: 27–28; 9:1] thereby making parenting a continuous process of bearing and nurturing children to fulfil God's creation plan. By this command, children are born to parents into families and into the world by the will and purpose of God either known to the parents or unknown to them. Both Christians and non-Christians have the ability to bear children by virtue of God's creation command and multiplication arithmetic on humans as long as one fulfils the formula of bearing children to produce after their kind, all things being equal. Without children in our lives human race cannot continue, hence the need to see every child as a continuity of God's creation and the human race.

*2.2.2 Children are a blessing*

God is the originator of children and He brings children into the life of individuals and families as a blessing. God is in control of their distribution to families as blessings not at the choice or chance of any individual but according to His will and purpose after the formula of bearing children has been applied. It is important to note that applying the formula of bearing children may not always result in bearing children. Children are from God as a blessing [Psalm 127:3–5; 128:3] first to families, communities, nations and the world as a whole. Bearing and nurturing children is therefore a blessing and the beginning of parenting. It should be the joy of parents therefore to raise children as a blessing from God and help them to continue being a blessing as they grow up into adulthood. This assignment of parenting could be very challenging in contemporary times but it is also a fulfilling job to see your children grow up and be a blessing to you and their generation. Children born to parents at their will or not should be appreciated as a blessing and not a mistake irrespective of the circumstances surrounding their birth.

*2.2.3 God has a plan for every child*

God has a plan for every child and it is the purpose of God through parenting that Christian parents will help their children to acknowledge God's plan for their lives through His Word. God's plan for the parent and the child is a good plan, it is a plan that will give hope, a future and an expected end for both parents and the child [Jeremiah 29:11]. As a Christian parent, it is very crucial to help your children appreciate that God has a plan and purpose for their lives, hence the need to believe in God's plan for them, seek to know more about the plan and seek to walk in it as they grow through life from childhood into adulthood. Your believe and trust in God that He has a plan for your child, will help you to seek to know the plan and purpose of God for your child and thereby continuously seek the will and guidance of God for your child through prayer, studying of scripture and applying the scriptures to your daily lives.

## 2.3 Parenting your child to fulfil the will and purpose of God

The task of parenting your child to fulfil the purpose and will of God could be a very difficult task, but as a Christian, the Holy Spirit is with you to help you in your parenting task. Some of the tasks you have to accomplish to be able to parent your child in fulfilment of God's will and purpose for you and your child include but are not limited to the following;

### *2.3.1 Appreciate God for your child*

It is very important that as a parent you appreciate God for the child you are parenting. It all begins with being grateful to God for blessing you and giving you the opportunity to parent the child, a special gift from Him to you and your family irrespective of the circumstances surrounding his/her birth. You still need to show gratitude to God even if you have no biological connection with the child. Your appreciation to God for blessing you with the child as a special gift from Him would give you the opportunity to value the child as a special gift and blessing from God who has a special purpose to fulfil in the world.

### *2.3.2 See the beauty of your child*

There is a special beauty in every child born for a special assignment. It behoves parents to see this beauty and to appreciate it in the life of their children. It is the beauty you see in your child that will help you to be positioned with faith that the child has something special to offer to your family, church, community, nation and the world as a whole. It is this beauty that will enable you to provide for your child in a special way and to protect your child even in the face of danger. The parents of Moses at his birth saw that he was beautiful and hence hid him for 3 months without being afraid of the king's edict [Hebrews 11:23]. Appreciating your child's beauty will help you love your child and help your child build good self-identity, confidence and love from God. As a parent do not wait for others to see the beauty in your child, see it in your child, help your child appreciate his/her beauty as the marvellous work of God who fearfully and wonderfully made him/her (Psalm 139:14).

### *2.3.3 Your child is unique, acknowledge it*

It is very important that parents acknowledge the uniqueness of their children among other children in different generations. No two children are the same even though they may be coming from the same biological parents and the earlier Christian parents acknowledge this the better. Knowing that your child is unique will help you explore and identify his/her unique talents, gifts, abilities and not be in a hurry to compare him/her to your childhood days, other siblings, relatives and other children. "Today's children are not only unique as individuals in relation to one another, but as a generation they are unique from every other generation that has ever lived because the world into which they were born is so strikingly different from the world of any other generation" [6, p. 38].

## 2.4 Responsibilities of the Christian parent

Parenting in the Christian perspective comes with responsibilities that will help the child to fulfil his purpose in life. Some of the responsibilities of parents from the Christian perspective include the following;

### *2.4.1 Discipline your child in love*

God is a God of discipline who disciplines those whom He loves and chastises every child whom He receives (Hebrews 12:6). God disciplines us as a spiritual father and He does that out of love with the aim of helping His children submit to him respectfully, helping his children to be the good of His people, to help them grow spiritually and to help them prepare for heaven [7, p. 549]. In like manner, Christian parents are to discipline their children in love with the goal of bringing up good children who will grow in wisdom, knowledge and understanding, give rest to the parents, be a delight to the heart of the parents and bring glory to God in everything. Children are disciplined to avoid bringing shame to their parents and families (Prov.10:1; 17:25; 29:15,17). Ways by which Christian parents can discipline their children include but are not limited to training, correction, verbal instruction and punishment [7, p. 549]. Let us discuss further these ways of discipline to appreciate how we can make good use of them.

#### *2.4.1.1 Training*

There are several scripture verses that encourage Christian parents to educate and train their children, as well as warn against the repercussions of not doing so. It is very important for every Christian parent to understand that God believes in you as a parent and that you can parent the child/children entrusted into your care after him. In Genesis 18:19, God says "For I have chosen him, that he may command his household after him to keep the way of the LORD by doing righteousness and justice, so that the LORD may bring Abraham what He has promised." Just as God chose Abraham to command his household, so God has chosen you to command or train your household (children and all under your care) after you. You can only offer good parenting if you first give yourself to God through Christ Jesus and learn of Him daily [8, p. 1051].

As a Christian parent, you have the responsibility to train your children to follow your steps in how you keep the way of the Lord by doing righteousness and justice. This is what I call training by living example, you cannot train your child/children to be righteous if you are not living a life of righteousness, and neither can you train your household to uphold justice if you are not living a just life. In effect, as a Christian parent, you cannot give what you do not have. Children are said to be good learners of what they see one do and what they hear one say. The first principle of training is therefore to let your child see you do what you expect of him/her. In other words, you do not command your children to live a life of righteousness and be just while you do otherwise. As a parent, always remember you are the first trainer of your child in what you desire of them. You are to train your child to love, by loving him/her and the people around you, you are to train your child to respect by respecting him/her even as a child and other people, you are to train your child to be obedient by being obedient to the Lord, you are to train your child to pray by praying with him/her, you are to train your child to read, study, know and apply scripture by reading, studying and memorising scripture as well as applying it to your daily life, you are to train your children to be descent by being descent in your speech, dressing and approach to issues. The list goes on and on because it is in exhaustive.

How you guide and train your children determines their Christian faith and how responsible they become in adulthood. Proverbs 22:6 is one of the most frequently quoted verses about child training for it calls on parents to "train up a child in the way he should go; even when he is old he will not depart from it." While children must

make their own decision to follow Christ (Romans 10:8–11), Christian parents like Abraham have the responsibility to train their children to know Christ and accept him into their lives as their Lord and Saviour by sharing the gospel with them and modelling a Christian lifestyle such that they would grow in Christ and not depart from their faith even in their adulthood no matter the challenges that may confront them.

It is worth mentioning that as a Christian parent, you are not only the first trainer of your children, but also you are the first evangelist and pastor of your children as you nurture and strengthen your child's faith in the Lord through His Word, they become perfect for every good work. Paul portrays Timothy's faith as being fostered from childhood through teaching in the scriptures, which "are able to make you wise for salvation through faith in Christ Jesus" (2 Timothy 3). Regular, age-appropriate Bible study with your children will help them develop sound doctrine, gain knowledge, wisdom and understanding to build up a Christ-centred character that will stand the test of time.

*2.4.1.2 Correction*

One sure way of disciplining your children is to correct them where necessary in love. As you train your child in the way they should go, it is important that you observe how they are applying the training to their daily life. As part of the observation, it is the responsibility of the parent to alert the child when he/she is not doing things right, thereby helping her to learn the right thing. "This must be done patiently, intentionally and according to the word of God" [9, p. 25]. This could be done through verbal instruction which could be in the form of rebuke or telling of stories in relation to the issue for the child to learn moral lessons from it and apply it to his/her life.

*2.4.1.3 Punishment*

In contemporary societies, there are many limitations on what punishment parents can give to their children because of human rights and children's rights advocacy. This notwithstanding, there are some basic human right-friendly punishments one could apply to help discipline the child when necessary. Some of these punishments could be withdrawal of privileges such as watching a favourite TV show, game or attending a family gathering on a special day. In any of these, that one may use, it must be applied in love and not in anger as God admonishes parents not to provoke their children to wrath but to bring them up in the discipline and admonishment of the Lord (Eph.6:4).

*2.4.1.4 Teach your child*

Parents are the first teachers of their children and it is a lifetime responsibility of every parent. It is expected that parents have the words of the Lord as well as basic principles and values of life in their hearts such that they can teach their younger children as they grow up [Deuteronomy 6:6]. God in Deuteronomy 6:7 instructs parents to teach diligently their children these things they have hidden in their hearts, when they sit at home, when on the way, when they lie down and when they rise up. These are to help them learn to be more like Christ in an ever-changing world.

Teach your children Christ through scripture, teach your children basic Christian values through scripture, teach your children about your family and your family

values through scripture, teach your children about your church and basic Christian doctrines through scripture, teach your children basic life values and principles through scripture and above all teach your children sexuality right from their infancy through scripture. Until you take the bold step to be responsible and diligent in teaching your children what they ought to know, society and the world around you will teach your children what you least expect of them. In teaching your children, you must warn them against social vices and negative lifestyles which are against the word of God [John 2:15–17; Prov. 1:10].

*2.4.2 Provide for your children's need*

Children have many needs that God expects parents to provide. Christian parents have the responsibility to provide for their children's needs holistically. As the jackals present their breasts to feed their young ones so the Lord expects every parent to feed her children (Lamentations 4:3–4). It is the responsibility of parents to provide the basic necessities of life for their children and these include food, clothing, shelter, education and security. Provide for the body, soul, spirit and heart of your children. Let there be a balanced diet for both the physical and the spiritual food of your children. Feed your children with a nutritious balanced diet for their physical growth and feed them the word of God for their spiritual nourishment and growth.

Also, provide for your children's emotional needs. According to the Worldwide Discipleship Association (Restoring your heart) programme, every human being has these four basic human emotional needs including children; Value, Acceptance, Security and Connection. This is because God created human beings with these four emotional needs through which God reveals His love and character to humanity. Short of any of these may cause people including children to feel hopeless and traumatised [10, p. 183].

As a parent, you are to help your child appreciate his or her value by helping your child know that he/she was created in the image of God and hence is a valuable asset to God and society. He/she should appreciate this value and not allow anyone to devalue them through abuses physically, emotionally, spiritually and sexually. The parent must also appreciate the value of their children by protecting them from physical, emotional, spiritual and sexual abuses.

Many children go through a lot of rejection from parents as a result of the circumstances that surround their birth. There are those who think that their children are bad luck because, through their birth, something bad happened to the family hence refusing to accept them. These make the children feel rejected and not accepted. To help your child feel accepted both by the family and society, the parents must show acceptance to their child irrespective of any life circumstances they may be going through and appreciate that their child is not a mistake, not bad luck nor a nuisance but a blessing.

Children who do not feel valuable and accepted mostly also do not feel secured. When children do not feel secured, they end up doing anything for their security. Some may end up being in the company of bad friends to feel secured. As parents, you have the responsibility of letting your child feel secured with you, in the family and in society. Let your children appreciate that their security is your priority as a parent and the best security they could ever have been to see God as their security and refuge for His name is a strong tower, the righteous man runs into it and is safe (Proverbs 18:10) because He never leaves nor forsakes those who run to him for safety (Deut. 31:6, Hebrews 13:5).

There are many children who do not feel connected to their parents and they feel that their parents are not enough and hence feel abandoned. In their quest to feel connected and complete they give themselves to substances and become addicted to such substances which in return destroys them. As a parent, help your child feel complete and enough by making quality time with them and helping them appreciate the continued presence of God through the presence of the Holy Spirit who lives in them (John 14:20).

## 2.5 Parenting, by choice or by chance?

Parenting is intrinsic so much that one begins to parent a child born based on each one's orientation on parenting. Most people do parenting by their experiences with their parents, grandparents and other caregivers. In most cases, new parents are schooled by their families especially mothers and grandmothers on how to handle their newborn babies. There are also those who look at others on how they are parenting and try to learn from them. With the presence of the internet and artificial intelligence, many also read books on parenting and do online studies on how to parent their children.

Having a child either biologically or without biological connection, planned or unplanned, with a partner or without partner's support, married or single, you have the choice to parent your child in the way of the Lord to fulfil his purpose or you may leave the parenting of your child to change in fulfilling the purpose of God for giving you that child.

Making a choice to parent your child as a Christian is about being intentional about what goes into the nurturing of the children entrusted into your care such that it will glorify God and make you fulfilled and proud as a parent. In other words, parenting as a choice is intentionally putting in effort to fulfil your responsibilities as a parent by focusing on training the head, heart and hand of your child in alignment with God's word with love in contemporary times irrespective of the challenges that may come your way.

Parenting by chance on the other hand is leaving your responsibilities and obligations as a parent to a probability or chance that your child's fate would be determined by his future hence little or no effort is made to ensure your child grows up in the love and fear of God.

Parenting your children as a Christian is therefore a choice and must not be left to chance. As a choice, parents need to be more intentional about the kind of environment they want to raise their children in and the style of parenting they need to adopt in nurturing their children in the way of the Lord to bring out the best in them, especially in today's complex society. "This is because researchers have posited that there are links between parenting styles and the effects these styles have on children" [11]. The four popular parenting styles are authoritarian, Authoritative, Permissive and Uninvolved and these are discussed below.

### *2.5.1 Authoritarian parenting*

As the name suggests, in authoritarian parenting, parents exercise their authority by establishing strict rules for children to follow without explaining the reasons behind the rules and when children fail to adhere to the rules, they are severely punished. In the parenting style usually referred to as "do before complain," the child must comply with the rules without questioning and they are expected to behave

perfectly without mistakes. In such a parenting style, the environment is always harsh, full of fear, tension and unwelcoming. Accordingly, Psychologist Diana Baumrind says, authoritarian parents are "obedience -and status- oriented, and expect their orders to be obeyed without explanation." They are often described as domineering and dictatorial, and their approach is "spare the rod, spoil the child." "They expect children to obey without questioning" [11]. As much as this parenting style is said to generally lead to producing obedient and proficient children, it has a high tendency to increase anxiety in children, lowering their self-reliance and reducing their intrinsic motivation. Most children are more likely to lie in most cases to avoid being punished [10].

### *2.5.2 Authoritative parenting*

> *Baumrind, establishes that, authoritative parents are good at setting standards and monitoring their children's behaviour. Their disciplinary methods are assertive and supportive rather than intrusive, restrictive or punitive. For authoritative parents, the goal is to raise children who are socially responsible, cooperative and self-regulated. The combination of expectation and support helps children of authoritative parents develop skills such as independence, self-control and self-regulation [11].*

The authoritative parenting style produces a conducive environment for children to become happy, capable, and successful children who often have higher levels of life satisfaction when they grow older [10].

### *2.5.3 Permissive parenting*

This type of parenting is also known as indulgent parenting. As the name suggests, they permit their children to do things with relatively low expectations of maturity and self-control. Parents make less demands of them and rarely disciplines them. Permissive parents emphasise on being friends to their children than being parents thereby becoming warm and attentive to their children. They hardly make rules for their children and where there are set rules, they rarely enforce them. Permissive parents permit or allow their children to make decisions on their own. According to Baumrind, the responsive and non-demanding nature of permissive parents may cause children to set limits for themselves especially when they do not expect mature behaviour from them. Whiles permissive parenting could help children become more self-sufficient and independent, it could also contribute to poor self-regulation [11]. Permissive parenting could again result in children with low rank in their happiness, are more likely to engage in high-risk behaviours and may tend to perform poorly in school.

### *2.5.4 Uninvolved parenting*

This type of parenting unlike the three discussed above was introduced by psychologists Eleanor Maccoby and John Martin. This type of parenting is also called neglectful parenting as it is characterised by few demands, low responsiveness, and very little communication. In uninvolved parenting, parents provide for the basic needs of their child but are basically detached from their child's life as they offer little to nothing in the way of guidance, structure, rules or even support. The parents may seem indifferent, unresponsive and dismissive. In some cases, neglectful parents may reject or neglect the provision of their children's needs and may also be physically and

emotionally abusive. Children raised by uninvolved parents tend to struggle in school, experience more depression, have worse social relationships, have difficulty controlling their emotions, and experience more anxiety. It is generally believed that neglectful parenting style ranks the lowest across all domains producing children who tend to lack self-control, high rates of delinquency, poorer self-reliance [11].

Each of the above-discussed parent styles has its effects on children, however, they do not work in isolation and as a Christian parent it must be your joy to choose the most appropriate and result-oriented parenting style and as well employ the help of God in prayer for the successful upbringing of your uniquechildren in the way of the Lord fit for every good work in society to the glory of God.

## 2.6 Handling wayward children

It is the desire of most Christian parents to see their children grow in the love and fear of the Lord. It is also their quest to see their children become responsible and successful in life at all times. It is for this reason that most parents invest their time and resources into the education and nurturing of their children. In spite of the time and resources invested into the life of these children, some may go wayward and become a threat to their families. Handling and dealing with such wayward children could be very difficult and frustrating. It is important to acknowledge that you are not alone if you have a wayward child and all is not lost in your wayward child. I do not have a wayward child but I been wayward before, I have had a wayward sibling before, but by God's mercies we been transformed and restored giving confidence to me that every wayward child could also be transformed and be restored.

As Christians we were all once upon a time wayward children from God our father. God seeing us as wayward children, did not give up on us but with his show of love and mercy, has brought us back to himself and is still bringing more others to himself through Christ Jesus. Jesus through the parable of the prodigal son in Luke 15:11–32 demonstrates that it is possible to have wayward children but not only that, most importantly, it is possible for our wayward children to return to us. Christ has therefore set an example for Christians to help them handle wayward children.

### *2.6.1 Show your wayward child your love and acceptance*

The frustration and the brokenness of parents with wayward children could make them easily lose their love for their children. Instead of losing your love for your child, you are encouraged to love your child if indeed you want to have your child back on track to live a pleasant life. It is in your love for your wayward child that you can go all out to do everything needed within your means to rescue your child from destruction following the example of God who so loved us that He gave His only begotten Son Jesus Christ to save us from perishing (John 3:16). God showed us love whiles we were still wayward (sinners), not when we were perfect (Romans 5:8). In the same way Christian parents are to also love their wayward children. In Luke 15:20, the father of the prodigal son showed love and compassion to his son when he was still a long way off. While your child is still a long way off, show him your love and compassion. Your child needs your love most at this point and not your judgement.

The father of the prodigal son in Luke 15:20 not only shows compassion and love to his son, but he also accepts him by running to him, embracing him and kissing him. Your wayward child needs your acceptance and not your rejection. Many wayward children may want to come back home but they are not sure whether they would be

accepted or rejected. Let your child know that your arms are ever open waiting to receive him/her back to yourself without condemnation.

*2.6.2 Pray for your child in love*

God knows that we cannot do it all by ourselves hence He calls on us to cast our burdens unto Him because He cares for us. God knows and perfectly understand you because He has been in your situation before, He is in the best position and ever ready to help you rescue your child from destruction but you must do your part by praying for your child's salvation in love trusting that God will save your child. Be passionate, intentional and consistent about this and fervently pray for your child that God who alone transforms life would transform your child for his glory. I believe the father of the prodigal son saw this in his son and did pray for the son's return and was therefore looking forward to his return, no wonder "while he was still a long way off, his father saw him coming."

*2.6.3 Point Jesus to your child*

The transformation you seek to have in your child is possible with your child's personal encounter with Jesus Christ. It is therefore important that as you love your child and pray for him you will also seize every opportunity you get to point your child to Christ as a dear friend who has come to save him/her. This is because the ultimate of all other things you may do for your wayward children is to ensure they come to faith in Christ and live their lives as children of God.

*2.6.4 Do not give up on your child*

The prodigal son passage in Luke 15:11ff makes us aware that the father of the prodigal son never gave up on his son despite the fact that he was wayward. No matter how wayward your child may be do not give up on them. It can be very heartbreaking, overwhelming but receive grace from God to continue doing your best for your child's restoration. Remember, God did not give up on us whiles we were yet sinners. Many are the things God expect of us as Christians which we continue to fall short in them but has not giving up on you hence do not give up on your child as well.

*2.6.5 Explore solutions together with your child*

Help your child appreciate the reality in identifying his/her problems. Together explore solutions to the problems identified with your child and be committed to applying the solutions identified. As part of the solutions, you may have to employ the services of a psychologist and in extreme situations, your child may have to be sent to a rehab. In all situations, be committed to the process prayerfully, and do not give up until you see your child fully transformed and restored to the glory of God.

## 3. Conclusions

This chapter discussed parenting from the Christian perspective. As a qualitative research, data were mainly gathered from secondary sources. The data gathered were analysed using theological interpretation. It is important to establish that I did

not come across research done by any particular denomination on parenting with a religious orientation even though some religious denomination books were used.

From the discussion, parenting from the perspective of the Christian is a process, a calling, a vehicle and a responsibility of raising children into responsible Christian adults with or without biological connection. Christian parenting shares the view that parenting practices should aim at three major goals ensuring children's health and safety, preparing children for life as productive adults and transmitting cultural values. The purpose of parenting could best be appreciated in knowing God's purpose for children.

Christian parents have the responsibility to train their children to follow their steps in how the parent keeps the way of the Lord by living by example in righteousness and justice. The first principle of parenting from the Christian perspective is to let your child see you do what you expect of him/her thereby making Christian parents the first teachers, trainers, mentors, pastors and evangelists to their children. Also, parents have the responsibility of providing holistically for the needs of their children.

Every child is unique and parents are to appreciate the uniqueness of their children in order not to train them in the same way as others. Parenting must not be left to chance but must be by choice whereby parents will be intentional about what goes into the nurturing of their children. Some parenting styles that one could choose from include authoritarian, authoritative, permissive and uninvolved styles of parenting. Choosing the most appropriate of these styles means considering the effects of each choice on the life of children.

In parenting a wayward child, parents are to love, accept their wayward children and by prayer, point Christ to them and trust God for their transformation and restoration.

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## Declaration

I declare that this work is the result of a write up by Patricia Addy (Rev. Mrs.) submitted to IntechOpen as a chapter contribution to the book, "Contemporary Issues in Early Childhood Education and Care."

I further declare that this work has never been submitted in part or in whole to any institution and any examining body and other works in the chapter have been duly acknowledged.

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Chapter 12

# Perspective Chapter: How Evidence Changes Practice and Vice Versa – A Framework for Describing Knowledge Transformations in Early Childhood Education

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**Abstract**

In-service training is a key learning opportunity for the professionalization of educational staff in childcare facilities. The extent to which the content of in-service training is applied in everyday practice is a key quality criterion for in-service training. There are therefore many different ideas and concepts about how this application—the transfer—can be supported. This article takes up theoretical and empirical findings from educational and teaching-learning research and presents a model of knowledge transformation from theory to action and from action to theory. Central to this model is the idea that knowledge is transformed by various actors (trainers and educational professionals) and that contextual and individual characteristics influence this transformation process. Implications for research and practice are discussed.

**Keywords:** vocational training, transfer, transformation, theory-praxis, action knowledge

## 1. Introduction

"The historical development of transfer has reached a point in which the 'it' underlying an investigation of transfer can no longer be assumed to be a well-agreed-upon construct."(p. 438) [1].

Individuals who actively engage in shaping educational processes often aim, either explicitly or implicitly, to act with intentionality. Typically, the design of educational processes is associated with the goal of enhancing abilities, skills, and preparedness [2]. These competencies are expected to be utilized in relevant situations, a phenomenon commonly referred to as 'transfer' [3, 4].

The transfer of content from one learning situation to another is a pivotal criterion for assessing the success of institutionalized educational processes. This transfer is

recognized as a significant challenge in the evaluation of professional development courses, theoretically framed as the theory-practice relationship in educational research, particularly in the context of teacher training, and empirically and experimentally investigated in psychological learning research [1, 5, 6].

Related research questions are also explored both theoretically and empirically in early childhood education. These inquiries include the significance of various types of knowledge for pedagogical practice. For instance, the debate on the academization of early childhood education teachers [7, 8] examines how and to what extent formal early childhood training prepares students for the challenges of everyday professional life and whether early childhood educators can effectively transfer university-acquired knowledge into daily pedagogical practice. Additionally, in the context of professional education and training for educational professionals, there is an ongoing inquiry into the extent to which such programs effectuate changes in practical work with children within educational institutions. This includes evaluating whether the content of professional development courses can be transferred to the institution [9, 10], thereby leading to tangible changes in children's educational processes.

In order to advance the discussion of the concept of 'transfer' in the field of early childhood education, it seems expedient to examine comparable research content from the neighboring disciplines of teacher education and educational psychology and to reflect on its usefulness for the context discussed here. This chapter therefore aims to provide a differentiated description of the phenomenon of transfer in early childhood education. Based on various theoretical and empirical findings, we assume that the term 'transfer' should be replaced by the term 'transformation' [1, 5]. In addition, we specify several steps to transform scientific knowledge into practical knowledge and, if possible, into practice. Finally, we argue for a bidirectional transformation, i.e., not only a transformation from knowledge to practice, but also that the practical experience of a professional can become systematized (experiential) knowledge through transformation. In our view, the model formulated in this way seems suitable for systematizing various empirical findings and recommendations in the context of professional development for early childhood education professionals [9, 11] and deriving further research requirements on this basis.

## 2. Transfer concepts

### 2.1 The transfer concept in the context of professional development for early childhood teachers

The transfer of professional development content into the workplace, particularly in early childhood education, is a central objective of professionalization approaches. Various expert reports and guidelines from the Weiterbildungsinitiative frühpädagogischer Fachkräfte (WiFF) [Continuing Education Initiative for Early Childhood Professionals] provide recommendations on how to facilitate this transfer within professional development courses [10, 12–14]. These sources also outline the necessary conditions within institutions to ensure successful transfer [15].

The underlying assumption is that competencies developed during these courses lead to effective changes in professional practice [16, 17]. To achieve this, it is crucial to create opportunities for practitioners to test and reflect upon newly acquired skills in their professional settings. Depending on the training concept, these opportunities may include actual trial phases or anticipated reflection phases,

during which professionals contemplate the opportunities and challenges associated with implementing specific training content [18].

Various empirical studies have investigated the challenges associated with professional development for early childhood education professionals [14, 19, 20]. These studies reveal that early childhood education professionals expect professional development programs to provide practical suggestions, facilitate the acquisition of new knowledge, and enhance their background knowledge [15, 20]. However, findings also indicate that pure case studies presented as "best-practice models" are less conducive to learning. Instead, a combination of theoretical knowledge and case studies is perceived to be more effective [15]. Additionally, both early childhood education teachers and principals recognize that the conditions within day care centers significantly contribute to changes in educational activities [15, 20].

There is still no consensus regarding the most suitable approach to changing professional practice. From the perspective of competence-oriented professional development, the primary focus is on altering the pedagogical actions of individual professionals [6, 9, 21]. Conversely, from an organizational perspective, it is argued that professional development should aim to change the pedagogical actions across the entire institution. In this view, individual professionals act as multipliers, disseminating the training content within their organizations through communication with team members [13]. Each of these perspectives is associated with distinct challenges.

In summary, current literature provides an understanding of transfer, which assumes that specific training content can be effectively transferred to institutions, provided that opportunities for reflection are available for professionals and that conducive conditions for implementing the training content prevail [9, 15, 22–24]. The aim of professional development is therefore to create opportunities for professionals to reflect on their current and future actions. Additionally, the quality of professional development courses is characterized by the extent to which they facilitate cooperation with organizations beyond the specific courses [10]. In this context, implementation research plays an important role in supporting the sustainability of the courses [25]. Particularly, identifying key success factors such as a scientific foundation for the programs and a good fit between the training content, structure, professionals, and their institutions can make a significant contribution [26].

### 2.2 The transfer concept in teacher education

For over 40 years, teacher training at universities and teacher training colleges in Germany has been divided into an initial academic phase and a subsequent practical phase. The relationship between theory and practice has thus long been a subject of both empirical and theoretical inquiry. Empirical studies indicate that prospective teachers often perceive university teacher education as being disconnected from practical experience, asserting that much of the content lacks relevance to their actual work in schools [27–29]. Furthermore, prospective teachers, similar to early education professionals, express a desire for more application-oriented formats that are relevant to practice [15].

Regarding the theoretical discussion on the theory-practice relationship, Schneider and Cramer [5] propose several definitions. The 'transfer understanding' posits that scientific theories and findings generate actionable instructions that can be implemented in practical school contexts. The 'transformation understanding' suggests that scientific theories and findings are (re)transformed to be applied in practice, incorporating knowledge and experience about the conditions for

success, failure, and the limitations of scientific theories. Finally, Schneider and Cramer [5] introduce an 'understanding of relation', which assumes that academic practice and school practice represent different perspectives on the same field of action. These perspectives exist independently and alongside each other (difference thesis). In the context of teacher education, it is assumed that both perspectives can be related through 'meta-reflection', which is conceptualized as a core element of professionalization [30].

In our view, it remains unclear whether these different conceptions of the connection between theory and practice can merge or whether the core of professionalization is completely encapsulated in the understanding of relation, i.e., the ability to meta-reflect. Therefore, we propose an understanding of the connection between theory and practice that prioritizes transformation over a classical understanding of transfer but considers the ability for meta-reflection indispensable for the professionalization of educational staff, whether they are teachers or educational specialists.

Even if it seems plausible to conceptualize the relationship between theory and practice in terms of transformation, there is little clarity on how specific practices can be further developed within professional development to contribute to the transformation of course content into individual action knowledge. It remains an open question whether courses should directly train behavioral patterns to facilitate the transformation of content into practical knowledge and ultimately into practice, or whether a non-direct path, in the sense of long-term skills development, should be taken. Hamre et al. [21] propose a model of transfer effects specifically for teacher training programs, addressing these open points by formulating two 'routes' for the transformation of training measures: in-service training can lead to changes either by directly training specific ways of acting (direct route) or by fostering competence development, thereby enhancing knowledge, motivation, or changing attitudes, which subsequently reflect in pedagogical practice (indirect route).

In summary, an understanding of the relationship between theory and practice in teacher education emphasizes the individual's active engagement and, with respect to knowledge change, tends to be based on an understanding of transformation. Formal learning opportunities in the context of teacher education thus create avenues to test the applicability of theories and evidence, practice them (training), and reflect on them at a higher level (meta-reflection) to expand or modify existing action patterns.

### 2.3 Transfer from a psychological perspective

The transfer of learning, defined as the application of a learned skill to a performance situation distinct from the learning environment, is a central topic of research in educational psychology [4]. Within experimental research, the focus is often on the conditions of the learning process as well as the similarities and differences between learning and performance situations. While this research paradigm examines learning and transfer in a highly specific manner—such as investigating the extent to which the ability to add numbers supports the learning of multiplication, or whether the learned ability to solve the rule of three is recalled in corresponding everyday situations [4]—the findings show parallels to perspectives in early education and teacher education.

Lobato [1] argues that transfer, traditionally viewed as the application of knowledge in a context different from that of knowledge acquisition, may be perceived as a generalization of what has been learned. This actor-oriented transfer suggests that action in a new situation can be described by a person's previous learning experiences.

Furthermore, a consensus across various lines of research suggests that the static application or transfer perspective should be replaced by a dynamic production or transformation perspective [1].

Barnett and Ceci [31] differentiate transfer into two dimensions within a classification model: a content dimension (what is transferred?) and a context dimension (between which contexts does the transfer take place?). The contexts between which knowledge is transferred can be described in terms of spatial, temporal, functional, social, and modality-specific conditions. Within these contextual variables, the 'proximity and distance' between the learning and application situations also influence the likelihood of the learned content being applied in other situations.

Day and Goldstone [32] explicitly address the challenge between concreteness and abstraction of the knowledge to be transferred. They note that highly contextualized knowledge can be effectively retrieved in the exact situation in which it was learned, but its application in other situations remains difficult. Conversely, very abstract knowledge seems to be easily retrievable in many different situations, but it is often difficult to understand, not sufficiently well learned, and learners may lack the ability to recognize relevant cues to use abstract knowledge to solve problems.

In summary, the static concept of transfer—where learning content is 'transferred' to a new situation—has evolved in favor of a transformation concept. This transformation concept places special emphasis on the individual's active engagement. Additionally, characteristics of learning and performance situations are specifically analyzed, and corresponding recommendations are derived.

## 3. Understanding transfer in early childhood education through multiple transformations

Approaching transfer from various research perspectives helps to elucidate findings from teacher education and educational psychology, thereby advancing the understanding of transfer in the context of early childhood education [33]. It becomes evident that an understanding of transformation aligns more closely with the theoretical and empirical state of research than a static understanding of transfer, which views training program content as simply being 'carried into the institution' or 'applied' there. In the developed model of multiple transformations (**Figure 1**), we explicitly propose the use of the concept of transformation, wherein the training content is transformed by the participating professionals into profession-specific specialized knowledge. This transformation process can be supported by appropriate formats within the context of the respective professional development courses. The effectiveness of implementing course content in practice [18] can be explained through the concept of knowledge transformation.

In the field of learning psychology, transfer is primarily addressed at the level of individuals [1]. In teacher education, scientific and school perspectives often function as depersonalized entities [5, 34]. However, in the context of professional development in early childhood education, teacher educators are explicitly considered central actors [10]. We share this view and believe that to describe how scientific theories and findings influence practical action in institutions, knowledge transformations on the part of the teacher educators must also be explicitly modeled. Such transformations occur, for example, in the course of didactic reductions [9]. Teacher educators select content for the design of a specific professional development course. Despite the importance of this step, little is known about how didactic reduction occurs and what

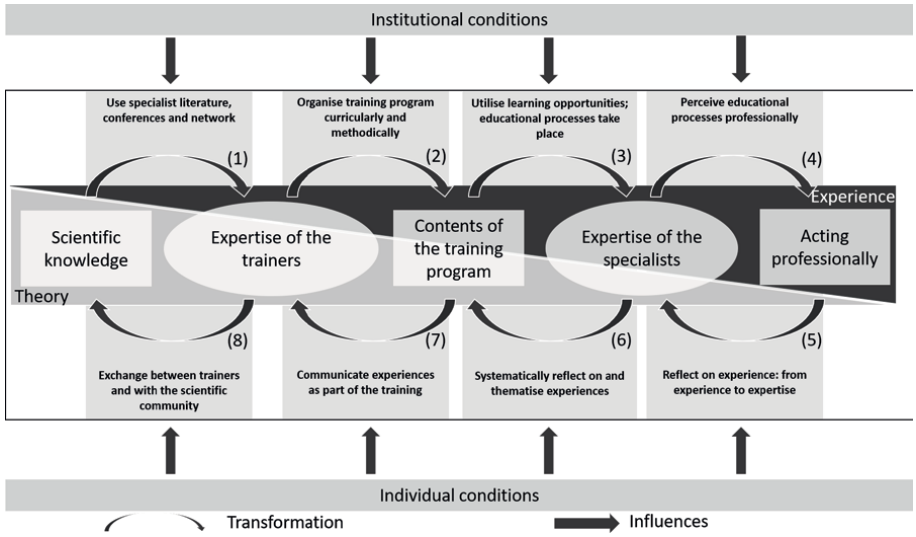


**Figure 1.**
*Model of multiple transformations (adapted from Ref. [33]).*

factors influence the outcome. It is conceivable that teacher educators' knowledge of the scientific literature, as well as their ability to anticipate the target group's prior knowledge, influences this transformation process [23, 35].

Reflecting on practical action is a central element of professional development [9, 12, 14]. Through systematic reflection, experiences are transformed into expertise [13] by converting specific experiences into generalized experiences or experience-based knowledge. With such a perspective, reciprocal effects can be systematically modeled and empirically investigated. For instance, the question of how professionals' practical experience impacts the conceptualization of specific professional development courses has been little investigated to date. How do teacher educators use the experiences communicated by professionals to build their own knowledge in the relevant content area, and how do they select training content based on this?

In summary, the understanding of transfer in early childhood education should prioritize transformation over a static transfer model. This approach emphasizes the active role of professionals in converting training content into specialized knowledge and underscores the importance of systematic reflection and didactic reduction in professional development. Future research should aim to investigate the reciprocal effects between practical experience and course conceptualization to further refine and enhance professional development programs.

### 3.1 Transformations from theory to experience

**Figure 1** illustrates our framework of multiple transformations, encompassing various interconnected components. Transformation processes between these components (1–8) are influenced by multiple factors. Central to the model is the content of a professional development course, which results from a transformation process wherein teacher educators select and prepare specialized knowledge in a content area through didactic reduction. This process aims to adapt the content to the learning situation of the target group, making it accessible to professionals as participants (2).

This transformation is influenced by situational conditions (e.g., the amount of time available for professional development) and individual factors (e.g., the assumed prior knowledge of the participating professionals by the teacher educator).

The specific expertise of the teacher educator is itself the result of various transformations involving the examination of scientific knowledge on the specific subject area (1). Specialized literature, scientific conferences, and exchanges within professional networks provide opportunities to build specific knowledge [14]. This transformation of scientific knowledge into the specialized knowledge of the teacher educator is influenced by situational conditions, such as the availability of specific resources, and by prior knowledge in the respective content area and general learning strategies.

By engaging with the content of the professional development course, professionals construct their own specialized knowledge (3). Offer-and-Use-Models [36] address the diverse influences on the utilization of learning opportunities for professional development. Characteristics of the learning environments designed by the teacher educator, as well as individual characteristics such as course motivation and reflection skills [11], influence the extent to which training content is transformed into specialized knowledge available to professionals. Meyer [9] emphasizes the importance of self-organized and self-determined educational processes.

Changing professional behavior is a central goal of professional development. To achieve this, teachers must transform the specialized knowledge acquired through various transformations in the course into actionable knowledge for specific situations (4). Professional vision (cf. [37]) as a knowledge-based process assumes that educational opportunities are recognized in respective pedagogical situations. Building on this, a systematic process of describing, interpreting, and decision-making is used to specifically organize pedagogical situations [38–40]. It is assumed that the accessibility of specialized knowledge (as a result of previous transformation processes) influences the ability of teachers to transform knowledge into specific actions in everyday situations. Contextual factors may also impact specific pedagogical behavior. For example, teachers often describe entrenched structures, lack of time, and insufficient resources as hindering factors in effecting behavioral change [15].

In summary, the framework of multiple transformations provides a comprehensive model for understanding how professional development content is transformed into specialized knowledge and subsequently into professional action. This model highlights the importance of various factors, including situational conditions, individual characteristics, and contextual influences, in shaping the effectiveness of professional development efforts. Future research should continue to investigate these transformation processes to further refine and enhance professional development programs in early childhood education.

### 3.2 Transformations of experience into theory

While the transition from theoretical content to practical knowledge and ultimately to practice is frequently addressed in the context of professional development, the transformations from practice into practical knowledge are seldom explicitly formulated. The importance of practical action is acknowledged when it comes to trying out new approaches to create conditions for sustainable change [9, 18]. However, to systematically utilize the potential of experience-based knowledge, we explicitly incorporate these transformations into our model (**Figure 1**), presenting a bidirectional modeling approach.

In their practice, teachers observe which pedagogical actions achieve the intended goals and which do not. They perceive boundary conditions, their own actions, and the actions of their children. Actions become experiences (making sense of actions) through reflection, and consequently, practical knowledge (having experiences, cf. [41]) (5). This transformation process varies significantly among individuals. Besides the availability of time resources, systematic strategies for reflecting on new forms of action and support from team members contribute to more in-depth reflection and thus to a more sustainable transformation into existing expertise.

The integration of practical experience into professional development courses, which span several days [42], aims to explore new options for action in respective institutions and systematically reflect on the experiences gained. Another transformation step is necessary for experiences (in addition to the transformation of action into specialized knowledge) to become part of the course (6). Participants must select from their wealth of experiences that they wish to share within the learning group. This selection process is influenced by individual characteristics (e.g., what the respective teacher finds worth mentioning), by the trainers (e.g., what instructions are necessary, in what formats reports are given), and by group dynamics. Video analyses of real situations promise great potential due to a supposedly lower reduction in information but must be evaluated considering other influencing factors. It should be noted that the experiences discussed in the course become part of the course content, which is then transformed by other professionals into their own specialized knowledge (3). Here, the educators have the crucial task of linking individual experiences with theoretical knowledge, thereby making meaningful use of the potential of case analyses [13].

In their courses, teacher educators are required to engage with the diverse experiences of teachers and adapt content and methods accordingly. If the experiences of the teachers become part of the course content and the teacher educators systematically address them, a transformation of knowledge occurs: the communicated experiences of the teachers become part of the professional knowledge of the teacher educators (7). These reported experiences are represented either as examples of implementation [43, 44] or more abstractly, concerning favorable and obstructive conditions. Teacher educators should be aware of the highly selective nature of this 'representative' experiential knowledge. In addition to the experiences of the participants in their respective institutions, it can be assumed that the teacher educators' experiences with the course concept change their professional knowledge through transformation processes. This transformation process is influenced by individual factors, such as the endeavors of teacher educators to continuously develop their training courses, and by institutional framework conditions, such as continuous evaluations and a quality management system [10, 13].

Finally, it can be assumed that the exchange between teacher educators with other teacher educators and the scientific community leads to a transformation of experience-based expertise into shared scientific knowledge (8). Besides general opportunities for exchange, such as participation in scientific conferences and time budgets for publishing in scientific journals, individual skills are also necessary, particularly concerning scientific writing.

In summary, the framework of multiple transformations provides a comprehensive model for understanding the bidirectional flow of knowledge in professional development. This model emphasizes the active role of professionals in converting practice into specialized knowledge and vice versa and underscores the importance

of systematic reflection, didactic reduction, and professional exchange in enhancing professional development programs. Future research should continue to investigate these transformation processes to further refine and improve professional development in early childhood education.

## 4. Implications for research

Current research on the effectiveness of professional development in early childhood education primarily focuses on the influence and impact of course concepts on pedagogical practice [15, 45–47]. Early childhood teachers are often viewed as individuals who implement various concepts within their respective institutions. Anonymized [11] demonstrates in a study that individual learning processes underlie the effects of professional development, and participants benefit differently from such courses. The framework of multiple transformations presented here emphasizes individual knowledge construction processes. Based on research findings from learning psychology and teacher education, it is posited that knowledge is not merely transferred but transformed. These knowledge transformations are influenced by individual and contextual conditions, which can ultimately explain the individuality of learning processes.

The differentiated consideration of knowledge transformation processes enables the systematization of previous research findings, each relating to specific aspects of the model. Furthermore, novel questions can be foregrounded, such as the extent to which the selection of course content by teacher educators can influence changes in practice. Additionally, there has been limited research on how teachers' experiential knowledge contributes to theory development. The model assumes that teacher educators could play a central role in this process by systematically incorporating the experiences of teachers and sharing them with the scientific community.

1. *Influence of course content selection*: Future research could investigate how the choices made by teacher educators regarding course content affect the practical application and behavioral changes among early childhood teachers. Understanding this relationship could provide insights into optimizing professional development programs.

2. *Role of experiential knowledge*: Another area for exploration is the contribution of teachers' experiential knowledge to theory development. By examining how teachers' practical experiences inform and refine theoretical frameworks, researchers can bridge the gap between practice and theory more effectively.

3. *Systematic reflection and knowledge sharing*: The model suggests that teacher educators have a pivotal role in transforming and disseminating experiential knowledge. Research could focus on the mechanisms and strategies that facilitate this process, including the role of systematic reflection and structured knowledge-sharing platforms.

The framework of multiple transformations offers a comprehensive approach to understanding the bidirectional flow of knowledge in professional development. By emphasizing the active role of professionals in converting practice into specialized

knowledge and vice versa, the model underscores the importance of systematic reflection, didactic reduction, and professional exchange in enhancing professional development programs. Future research should continue to investigate these transformation processes to refine and improve professional development in early childhood education.

In summary, the framework of multiple transformations provides a robust model for understanding how professional development content is transformed into specialized knowledge and subsequently into professional action. This model highlights the importance of various factors, including situational conditions, individual characteristics, and contextual influences, in shaping the effectiveness of professional development efforts. Future research should aim to investigate these transformation processes further to enhance professional development programs in early childhood education.

## 5. Implications for training practice

Guidebooks and expert reports from the Continuing Education Initiative for Early Childhood Education Professionals on competence-oriented professional development [9] and quality management [10] contain numerous criteria, tips, and suggestions that can explicitly be interpreted as transformations within the framework of multiple transformations presented above (**Figure 1**). One example is the didactic reduction by teacher educators [9], which serves as a transformation from the specialized knowledge of the teacher educator to specific course content (cf. also the principle of didactic reconstruction, [48, 49]). Reflection within the course regarding implementation conditions in the institutions [14] aims to transform the specialized knowledge of the educational professional into pedagogical action knowledge.

The model thus serves to systematize and organize processes in the development, implementation, and evaluation of professional development. At the same time, a differentiated perspective on transformations can offer opportunities for optimization. For instance, it is conceivable that the selection of content during the development of a specific training program heavily depended on the specialized knowledge and attitudes of the person developing it (cf. [35]). Addressing this selectivity can lead course developers to review the content of the course and, if necessary, adapt it for the specific target group. Explicitly approaching experiences in practical action allows training institutions to critically reflect on this aspect concerning their own work. In this context, questions are important regarding the extent to which the selectivity of reported experiences becomes the subject of course evaluation or the extent to which the experiences of participants influence course content.

The framework of multiple transformations offers a structured approach to understanding and optimizing professional development processes. By emphasizing the transformation of knowledge through didactic reduction, reflection, and practical experience, this model provides a comprehensive perspective on how to enhance the effectiveness of professional development programs. Future research and practice should continue to explore these transformation processes, ensuring that professional development initiatives are systematically organized, critically evaluated, and continuously improved.

In summary, the framework of multiple transformations provides a robust model for systematizing and organizing professional development processes in early

childhood education. By addressing the transformation of specialized knowledge into course content, reflecting on implementation conditions, and critically evaluating practical experiences, this model offers valuable insights for optimizing professional development programs. Future research should aim to further investigate these transformation processes, contributing to the continuous improvement of professional development initiatives.

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*Contemporary Issues in Early Childhood Education and Care* delves into the dynamic landscape of early childhood education and critically addresses the intersection of theory and practice, offering a range of theoretical frameworks and practical strategies to support the holistic development of children. It explores a diverse array of topics, including integrating artificial intelligence tools in preschool settings, the development of metacognitive skills in young children, and the role of participatory practices in fostering democratic engagement. It also examines resilience-building through innovative playground designs and the importance of inclusive approaches for refugee and immigrant populations. This book also presents entrepreneurial coaching as a framework for enhancing children's participation, lifelong learning, and values-driven parenting from a Christian perspective. Additionally, the volume highlights the impact of the COVID-19 pandemic on young children's psychological well-being, emphasizing their heightened awareness and involvement in decision-making processes. Inclusive assessment methods supporting shy children in educational settings are explored, and the benefits of slow pedagogy versus hurried schooling are examined. Furthermore, it investigates the role of statistical analysis in shaping early childhood education policies and practices. This work underscores community support systems can mitigate stress and adversity and strengthen children's capacity to thrive in their communities. At the same time, play environments can nurture physiological and psychological resilience. With a strong focus on equity, pedagogical innovation, and evidence-based approaches, this volume is an essential resource for educators, researchers, and policymakers to create inclusive, equitable, and supportive learning environments that foster lifelong learning trajectories.

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