Wendy Boyd
Susanne Garvis *Editors*

Early Childhood Pedagogical Practices Across the World

Selected Case Studies on the Role of Teachers for Learning and Care

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ISBN 978-981-96-2746-2 ISBN 978-981-96-2747-9 (eBook)
https://doi.org/10.1007/978-981-96-2747-9

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About the Editors

Wendy Boyd is a professor at Southern Cross University, Australia, researching the provision of quality in early childhood education and care and preparing effective early childhood teachers. This focus extends to the support of early childhood educators in the field to retain them in their profession. She entered academia after 24 years working in early childhood education consistently delivering high-quality programs for children aged from birth to five years.

Susanne Garvis is a professor of early childhood education at the Griffith Institute for Educational Research, Griffith University. She is an international expert in early childhood education pedagogy and has worked in Sweden as well as Australia. Her research has contributed to early childhood policy around the world in regards to quality improvement and evaluation standards. Her most recent projects have focused on learning trajectories, quality assessments and supporting pedagogical practices.

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Introduction

Ann-Charlott Wank, Susanne Klaar, and Pia Williams

In this book we collect pedagogical practices from around the world as case studies to show the important work of early childhood teachers. Each country shares unique features of their pedagogical work to show how they support young children's learning and development, and to work with families and communities. The intention also allows us to document innovative and exemplary practices to build a repertoire of pedagogy and understand cultural and contextual differences. Across the countries, we explore routines, transitions, intentional teaching, shaping the environment, and other important aspects of learning and care. This snapshot also provides opportunities for the development of commonality of practice and to explore variations that exist around supporting young children's learning and development.

Before we begin however, it is important to understand our definitions of early childhood teachers and the role of pedagogical practices in early childhood education. Early childhood teachers are described in different ways across different countries but a commonality is that they work with young children within a formal early childhood setting (preschool, kindergarten, long day care program, nursery). Some countries will define teachers in this age range under the terms of early childhood teachers, preschool teachers, kindergarten teachers, early years teachers, educators and pedagogues. In this book we have allowed authors to use terms that they feel best represent the 'teacher' working in the specific context. In this forward, we have chosen to use the term early childhood teacher.

Pedagogical practices are "the instructional techniques and strategies that allow learning to take place … and refers to the interactive process between teacher and learner and it is also applied to include the provision of aspects of the learning environment (including concrete learning environment, and the actions of the family and community)" (Siraj-Blatchford et al., 2002, p. 10). Across the literature, while we have generalized understandings of early childhood education and what supports

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W. Boyd and S. Garvis (eds.), *Early Childhood Pedagogical Practices Across the World*,
https://doi.org/10.1007/978-981-96-2747-9_1

quality improvement within early childhood settings, less is known about effective pedagogical practices. This may be because structural issues of quality (such as group size with ratios of adults to children, raising levels of teacher qualifications, standardized curricula and evaluation system monitoring) are easier to control and support at a policy level and provide systematic change across the sector. A focus on the teacher as giver of pedagogical practice moves towards supporting process quality and essentially explores what the teacher is actually doing with children. Thus, it is at an individual level of delivery, rather than a systems level.

Pedagogical practice is dependent on the teacher's skills, knowledge, experience and understanding of young children's learning and development. The relationship is between teacher, child and family in an interactive process of exchange to support learning and development. We know that teachers and families make the difference in children's learning. Through supportive home and educational environments working together, children are supported to reach their potential. In this instance, the role of the early childhood teacher becomes crucial in supporting the learning and development of young children in their early years setting. The teacher is aware of the interests and abilities of young children and able to support them with appropriate pedagogical practices.

Pedagogical practices are also bound by cultural and contextual norms. This means there is variation in pedagogical practices across the world, based on the individual cultural and contextual needs of young children. In some countries, pedagogical practices are defined in curriculum and framework documents of how to support children's learning. In other countries, the choice of pedagogical practices is up to the teacher, the community and the overall philosophy of the early childhood setting. Thus, we find that the context of early childhood education around the broad as highly diverse with the implementation of pedagogical practices.

Across the research literature in early childhood education, limited information exists on effective pedagogical practices to support young children's learning and development outcomes. This book is innovative in bringing together case studies from around the world to build a foundation of pedagogical practices that early childhood teachers implement. We hope to establish a collection of practices to support ongoing discussions on how to best support young children and their families.

In this book, we have collected case studies from around the world to illuminate variations in pedagogical practices. We traverse countries to bring together current empirical evidence on what early childhood teachers do to support young children's learning and development. In this volume, countries include China, Australia, Sweden, Finland, Bangladesh, Indonesia, Japan, Vietnam, Germany, Chile, Canada, Ireland, New Zealand, South Africa as well as the region of the United Kingdom. Each context is unique to support local knowledges and culture within the child's development. Practice is rarely conducted in isolation and many of the chapters make this point.

A wide range of pedagogical practices are shared, including a focus on the individual unit of the teacher, as well as the impact of leaders and working within peer-mentoring communities. Across the case studies, we also see a wide range of pedagogies, including direct instruction, play learning and the pedagogy of care. Many

of these are bound with cultural norms for early childhood education and promote strong support for children's growth and learning.

In bringing together pedagogical practices from across the globe, the book is able to draw on the experts. We divide the book into two sections to establish a base of pedagogical practice (Sect. 1) and then to also explore specific features within countries that make pedagogical practice possible (Sect. 2).

1 Practice

In Sect. 1, we begin with chapter one from the Swedish preschool context with *Wank, Klaar and Williams*. The chapter provides a historical perspective on the unique way of considering the role of preschool education. As such, teaching is understood and concretized in preschool practice by using the three functions of education. Chapter two (*Funnell)* shares important insights on children's play behaviors in natural spaces chosen and sought by them, allowing for the provision of the early childhood teacher to share their views and understandings of the multiple roles in the outdoor environment in Australia. We next move to Bangladesh with *Rashman, Akter Tanni, Islam and Boyd (*chapter three), where an exploratory study is presented on preschool teachers' preparedness for technology-mediated teaching in an emergency situation. The gathering of evidence informed practices further support advocacy within practice and policy.

We next move to Western China in section one with *Liu, Boyd and Wei* (chapter four) where the tensions between parents and preschool education beliefs on pedagogy emerge. The chapter notes that while most parents are willing to pay for their child's education, they are influenced by traditional Chinese ideas at home that may be considered inappropriate education methods. Chapter five presents a snapshot of the current values that underpin early childhood education practice in Northern Island, Scotland, England and Wales (authors *Carroll-Meehan, Nugent-Jones, Wills, Wolniakowska-Majewska, Brie and Kerr*). Examples of practice to facilitate children's learning and development are shared that support the implementation of the relevant curriculum frameworks. The context of Finland is presented in chapter six, where *Kangas, Ukkonen-Mikkola and Harju-Luukkainen* explore the use of play to promote the learning of young children and how to design and plan educational activities that align with curriculum goals. Key messages emerge on how teachers can utilize and communicate important playful activities with children. We stay within Europe for chapter seven that focuses on social pedagogy approaches in Germany (*Rothe).* The chapter explores how professional teams in early childhood settings establish a professional horizon. The chapter acknowledges the importance of shared understandings of pedagogy and provides important insights into how policy informs practice.

The final two chapters in section one (chapter eight and chapter nine) share relevant examples of pedagogical practices with young children. Chapter eight (*Cooper and Rockel)* is rich and illustrative of pedagogical practices, where cultural and

non-Western concepts are explore and explained within the New Zealand scenario. Chapter nine (*Nguyen*) shares insights from the Vietnamese context, where the importance of the historical context is also discussed. The diversity of chapters across section one draws together key insights into a range of pedagogical practices implemented with young children across the world and shows the varied roles early childhood teachers undertake.

2 What Makes Pedagogical Practice Possible?

In this section each chapter explores pedagogical practice in ways that support children's learning. The first chapter, by *Mills* from Australia (Chapt. 10), in this section encourages the reader to consider the pedagogical shifts that children undertake when moving from an early childhood setting into primary school. A strong case is put forward for engaging in play-based pedagogies in primary school with the benefits, challenges and opportunities being outlined so that children do not encounter a sudden change away from learning through play, to academic pedagogical approaches. The next two chapters focus on leadership pedagogy in early childhood settings. First *Opazo, Pardo, Figueroa, de la Fuente, Vanni, Valenzuela* and *Uribe* (Chapt. 11) from Chile describe the how ECEC leaders promote relationships with children's families with three case studies. Through these case studies they outline effective leadership actions for parents' involvement in ECEC. Delving into the conduct of teachers *Tamah, Dewi, Annawati, Gunawan, Tanuraharja* and *Devika* from Indonesia (Chapt. 12) present research on how early career teachers construct and confirm meaning through sustained reflection and discourse through the process of cognitive presence as part of their professional growth.

Moving to Ireland *Moloney*'s chapter (Chapt. 13) addresses how in 2023 a pedagogy of play has been introduced for the early childhood-primary school continuum. This aims to ensure a consistent approach across early childhood and primary school,

Armstrong's chapter (Chapt. 14) then presents findings of an Australian study conducted to understand the influences impacting the educational leaders' role and their pedagogical approaches. Past experience, and role description were found to contribute to the evolving pedagogies of the educational leader. Further support for educators' professional learning is presented by *Doan's* chapter (Chapt. 15) on the peer mentoring program that Doan leads in Canada. By sharing perspectives, educators developed professional friendships, felt valued and heard, which positively impacted educator efficacy and professional identity development.

The theoretical foundations of developing dialectical thinking in preschoolers, and based on the "child's participation principle" in the educational process are explored by Russian's Shiyan and Shiyan (Chapt. 16). The child's participation principle leads to a child's mastering of cognition especially important for forecasting, planning and reflecting, in the life of the child.

Chapter 17 by Harrison, Scott, Morris, Delport, Ashley-Cooper and Harrison from South Africa explains how the use of 'loose parts' addresses practical pedagogical approaches that leads to equity, inclusivity and diversity. Section 2 concludes with a chapter by Uchida, Koga and Muto (Chapt. 18) that presents a summary of the historical background of ECEC in Japan, its traditional focus that has moved to three standards/guidelines that emphasize children's play. With this change there are many exemplary centres however many practices have not yet broken away from the traditional group-based uniformity and repetition of daily routines.

We hope that by drawing together chapters from different countries and contexts, we can also prompt discussions around pedagogical practices with young children and their families. The chapters acknowledge that pedagogical practice is not conducted in isolation, but rather within a bigger system of influence.

We thank all of the wonderful authors and reviewers who helped support and create this wonderful and insightful volume. We have amazing people across the world wanting to support quality early childhood education practices for all children. Thank you for your advocacy and ongoing support in sharing knowledge and understanding about pedagogical practices to support young children's learning and development.

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Siraj-Blatchford, I., Sylva, K., Muttock, S., Gilden, R., & Bell, D. (2002). *Researching effective pedagogy in the early years*. University of London.

Ann-Charlott Wank holds a PhD degree in education and works as a senior lecturer in early childhood education at the University of Gothenburg. With her background as a preschool teacher, her research interest is in young children's learning and meaning-making, with a special focus on how communication influences children's opportunities to participate in meaning-making processes.

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Practice

A Portrait of Indonesian Teachers of Young Learners: Cognitive Presence in Indonesia

Siti Mina Tamah, Cresensia Dina C. Kumala Dewi, Bergitta Dwi Annawati, Ivan Gunawan, Louisa Alexis Tanuraharja, and Saviera Christina Devika

1 Introduction

Education for early childhood is the best investment that can be made to prepare competent individuals to be able to teach nationally and internationally. Quality children's education will determine the success of a nation. In Indonesia, the government pays serious attention to Early Childhood Education (ECE), since the issuance of a law which regulates ECE: Law number 20 of 2003 concerning the National Education System (Tamah, 2014). This Act explains the meaning and rules of ECE in Indonesia (Kementrian Pendidikan dan Kebudayaan, 2003). Within this law, the positioning of ECE is considered as education prior to school that prepares children for basic education. The age range for early childhood education under the law is 0–6 years (Sujiono, 2013). ECE plays an important role in supporting optimal child development. For children, playing is the most appropriate way to learn (Husein, 2020). The application of playing within ECE emphasizes activities that invite children to explore, have curiosity, to solve problems, and be directly involved in learning for children.

The Indonesian government strives to enhance ECE by improving teacher competence through various training programs. However, the country's archipelagic geography poses challenges in evenly distributing these services to all teachers. Issues such as inadequate infrastructure, including roads and transportation, contribute to unequal access to training. Training programs, often centered in urban areas, create difficulties for teachers in remote locations, resulting in a disparity wherein rural

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W. Boyd and S. Garvis (eds.), *Early Childhood Pedagogical Practices Across the World*,
https://doi.org/10.1007/978-981-96-2747-9_13

and remote area teachers receive less training compared to their urban counterparts (Chang et al., 2014).

In 2021 there were 669,845 ECE teachers spread throughout Indonesia (Kementrian Pendidikan dan Kebudayaan, 2021). This large number of teachers means that the government cannot reach all teachers from every region of Indonesia to be given the opportunity to improve their competence. Therefore, it is necessary to provide technology-oriented training alternatives such as the use of the Learning Management System and Zoom that can be accessed by teachers from various parts of Indonesia. To be more specific, one alternative solution offered is through professional development online training which is carried out for a limited period of time.

When implementing online training for teachers, the authors utilized the Community of Inquiry (CoI) framework. CoI includes Cognitive Presence, Social Presence, and Teaching Presence which can provide meaningful learning experiences (Garrison et al., 2010). Cognitive Presence consists of four phases according to the Inquiry Learning model which includes: (1) triggering events, (2) exploration, (3) integration, and (4) resolution (Garrison et al., 1999).

The success of ECE is closely related to the quality of teachers who educate the children (Manning et al., 2017). Teachers who have competence and creativity have been found to produce students who are creative, have enthusiasm to learn and are motivated to continue to develop (Hapidin et al., 2020). Teachers work with diverse students from different economic levels, social backgrounds, and different cultures. To continue to provide the best service, teachers are expected to have a passion for lifelong learning. This means that teachers are expected to continue to improve their abilities so that they can face various challenges while providing services to students. In addition, teachers are expected to have resilience to face various challenges and be able to adapt to changing times (Tamah & Wirjawan, 2022). ECE teachers play a crucial role in laying the foundation for development, shaping character, and instilling positive habits. ECE serves as the initial stage that becomes the cornerstone for subsequent levels of education.

2 Teacher Professionalism

The knowledge, abilities, and behaviors teachers exhibit to be successful educators is called teaching professionalism (Demirkasımoğlu, 2010). For teachers to accomplish their job responsibly their personality and character is often brought to the fore (Evett, 2011). Teachers need to manage their emotions and thoughts effectively and to effectively teach they must enhance their knowledge and cultivate positive attitudes toward teaching (Kramer, 2003). This can be achieved by actively participating in professional development programs providing them with a comprehensive understanding of effective teaching methods.

Ongoing professional development for teachers is crucial for enhancing their pedagogical approach (Dudzinski et al., 2000). By continuously learning, teachers can enhance their skills and knowledge, ultimately leading to a more prosperous

and fulfilling career in education (Su & Wang, 2022). According to Futernick's (2007) study, a lack of adequate professional development opportunities for teachers can result in high turnover rates and hinder their potential for advancement toward leadership roles. Educational institutions must prioritize ongoing training and support for educators to foster a positive and successful learning environment. Professional development increases leadership skills for teachers (Germuth, 2018).

Several studies have implemented various methods in the teacher professional development program. Tamah and Wirjawan (2021) developed a new formative assessment approach for the professional development of 100 Indonesian high school teachers. The teachers' responses to a newly introduced group-based evaluation technique revealed that most teachers were willing to embrace the new approach. They also found that novice teachers were the most flexible in adapting to the method. Oddone (2022) emphasizes the importance of flexible, innovative, and remotely accessible approaches to professional learning for educators. Moreover, Lange et al. (2022) assert it is crucial for educators to have a strong understanding of how to implement innovative teaching methodologies in their classrooms, particularly for teaching STEM to young students. Harjanto & Tamah (2018) have observed that Indonesian teacher subjects were improved through certification and professional development programs. Their study revealed two primary motivations for becoming teachers: altruistic reasons and external influences from family, friends, and former teachers.

Professional development encompasses a multitude of methods aimed at enhancing an individual's expertise, attitude, and knowledge including attending conferences and workshops, participating in courses and seminars, mentorship and coaching programs, engaging in self-directed learning, and seeking new challenges and growth opportunities. Ongoing professional development can help teachers acquire new insights and perspectives, stay abreast of the latest trends and best practices, and continuously hone their skills to remain competitive and effective in the workplace (Dudzinski et al., 2000). For example, ongoing professional development that focuses on teachers' learning of STEM education. Teachers learn how to teach STEM and they apply STEM in their classroom.

3 Teachers' Attitude, Knowledge, and Application of STEM Education

Three crucial domains to consider for teacher development are attitudes, knowledge, and application of STEM education. Salami et al. (2017) and Lange et al. (2021) found that teachers' attitudes and knowledge affect their teaching of STEM in the classroom. A positive attitude, knowledge of STEM education, and know the application of STEM education could be accomplished by engaging teachers in professional development programs.

Numerous studies have developed professional development programs to improve teachers' attitudes, knowledge, and application of STEM education. For example, Annawati et al. (2022) conducted a professional development program to improve early childhood teachers' attitudes, knowledge, and application of STEM. The researchers reported that the program improved teachers' attitudes, knowledge, and application of STEM education among participants. Additionally, the study observed results that showed significant improvement in understanding STEM education, and teachers reported increased enthusiasm for STEM-based teaching. Furthermore, a study conducted by Wahono et al. (2019) revealed that science teachers had a positive attitude towards STEM education, with a moderate level of application and a low level of knowledge. Differences in knowledge and application were observed based on educational background and teaching experience, but no differences were noted in teachers' attitudes. Based on these findings, it is evident that teachers' knowledge and positive attitudes play a crucial role in introducing STEM to students. To effectively implement STEM education in early childhood, teachers also need to possess sufficient understanding. Therefore, this research aims to provide an overview of the Cognitive Presence of ECE teachers concerning STEM education.

4 Method

170 ECE teachers were engaged in as seminar introducing STEM-infused instruction for young learners of 4–6 years old, but only 116 teachers joined the online classes in the CoI framework. The research participants were invited from schools partnered with the research team's institution in the implementation of teaching practices.

An online class focused on Cognitive Presence designed using a Moodle-based Learning Management System. Lasting eight weeks, the class consisted of learning modules addressing four themes: (1) Animals, (2) Vegetables, (3) Jobs, and (4) Recreation. Each module consisted of (1) The overview, (2) Learning Activity 1, (3) Learning Activities 2A, 2B, 2C, and 2D for reflective discussion guided by questions 1–4 respectively), (4) Learning Activity 3, (5) Learning Activities 4A, 4B, 4C, and 4D for reflective discussion on Learning Activity 3, (6) Additional materials on teaching young learners, (7) Comprehensive quiz, and (8) Conclusion. Learning Activities 2 and 4 were intended for reflective discussion in the asynchronous discussion forum. The researchers concentrated on the first and last learning modules to scrutinize the Cognitive Presence in their virtual collaborative learning (VCL)—claimed by Beckmann & Weber (2016) as a sophisticated type of eLearning gaining attention in research and higher education practice. 98 teachers participated in the discussion forum (See Table 1) while 92 teachers and 89 teachers were communicating one another in the first and last learning activities respectively. The participation rates were 93.88% and 90.82% respectively. Only one male teacher—at his forties and having > 15 years of teaching experience—was engaged initially but did not eventually stay.

Table 1 The teachers' profile (N = 98)

Variable	Note	N	Percentage (%)
Teaching experience	< 6 years	24	24.49
	6–10 years	20	20.41
	11–15 years	20	20.41
	> 15 years	34	34.69
Age	< 31 years	15	15.31
	31–40 years	30	30.61
	41–50 years	32	32.65
	> 50 years	21	21.43
Area	Ambon	4	4.08
	Ende	14	14.29
	West Kalimantan	33	33.67
	South Kalimantan	1	1.02
	North Kalimantan	5	5.10
	Lombok	3	3.06
	Maluku	10	10.20
	East Java	28	28.57
Education background	High School	11	11.22
	Univ. student	1	1.02
	Bachelor (D3 level)	7	7.14
	Bachelor (S1 level)	74	75.51
	Master (S2 level)	5	5.10
Gender	Male	1	1.02
	Female	97	98.98

5 Data Source and Research Data

Eight reflective discussion forums were the data source. For Learning Activity 1, the questions included: (1) What is your opinion about the two videos watched? (2) Have you ever tried the activities? (3) What are the strengths and weaknesses from each activity in both videos? (4) What obstacles might arise when you apply these activities in class? (5) How can you as a teacher emphasize STEM concepts through the provided model of alternative learning activity (relate it to the "Livestock" and "Wild Animals" sub-themes)?

The last three posts—centering on alternative activity—required the participants to (1) comment on possible obstacles, (2) think of alternative strategies, and (3) provide other alternative activities to facilitate further critical and reflective thinking. For Learning Activity 4, similar guiding questions were provided on 'Recreation' topic.

6 Data Analysis Procedure

Referring to the four categories embedded in Cognitive Presence namely Triggering, Exploration, Integration, and Resolution respectively given typical examples as *Sense of Puzzlement, Information Exchange, Connecting Ideas,* and *Applying New Ideas* (Akyol & Garrison, 2008; Garrison, 2009, 2017), the writers expanded this construct. More indicators for each category were obtained by analyzing the emerging categories indicating elements appearing in collaborative group discussion as used in Tamah (2011) and Tamah et al. (2022). Categories of *Nomination*, and *Group Maintenance* in the previous analysis categories were excluded as they were identified as Social Presence.

There were entirely 415 units of analysis spotted. In Learning Activity 1, 187 units of analysis were detected, while in the last learning activity 228 units of analysis were identified. All discovered units were analyzed. Performed by two colleagues of the authors, the analysis was guided by the Cognitive Category and 13 Scaffolding Indicators (Table 2). From all units of analysis, the coded postings were reported reaching 88.05% agreement. Among the 13 scaffolding indicators presented (Table 2), only 10 were identified. Table 3 shall depict the indicators found in the present study.

A single teacher's post could be assigned multiple codes or units of analysis. For example, "I agree, and I've previously implemented Mrs. Nurul's suggestion by providing children with media for drawing, even though the outcomes varied among the children." This was categorized as Further Assertion, Extended Explanation, and Nomination. Consequently, this particular post was recognized as having three units falling into three categories due to its scaffolding interaction.

7 Findings and Discussion

7.1 Engagement of Teachers of Young Learners in the Community of Inquiry

This study found the Integration category predominated in this community of teachers of young learners regarding Cognitive Presence (Fig. 1).

The Cognitive Presence pattern (Fig. 2) is similarly indicated for the one overtime (Beginning and End).

When the data were analysed further, it was found that among the four different groups of teachers, similar Cognitive Presence dynamics were discovered (Fig. 3). Integration was consistently the highest—averaging 59.49% (ranging from about 55% to slightly below 71%).

A significant finding from this study is that the teachers were involved in the discussion on the Integration category. Their engagement became apparent through responses to questions or requests, reflecting the ongoing discourse. Additionally, their participation manifested in straightforward repetitions, such as expressing

Table 2 Cognitive category and its scaffolding indicators

1. Triggering events	1.1	*Dir.M*	Direction Maintenance: keeping each other in pursuit of the task goal and working towards its completion, guiding activity on the task, or instigating discussion
	1.2	*Ref.Q*	Simple referential question: a basic request for information; request of a response for verifying the prepared answer, or checking the result of the task
	1.3	*Sim.As*	Simple assertion: a beginning assertion without details which express a viewpoint or provide an answer concerning a topic that is being addressed for the first time
2. Exploration	2.1	*Cla.R*	Clarification request: a probing query asking for assistance (for an existing issue rather than a new one) to get clarity or for re-explanation
	2.2	*Conf.Ch*	Confirmation check: a query requesting confirmation, focusing, analyzing, or inquiring whether peers agree with an idea given
	2.3	*Com.Ch*	Comprehension check: an attempt to verify if peers have comprehended the problem discussed, or an attempt to avoid communication failure
	2.4	*Err.Exp*	Erroneous explanation: an assertion that displays false or incorrect information
3. Integration	3.1	*Fur.As*	Further assertion: a response to a clarification or confirmation check. It includes (1) a response to a question or request indicating the progress of discussion, (2) a simple repetition of the issue discussed, of previously stated (in)complete utterances (self-or other-repetition) as a sign of participation, and (3) a simple completion to an unfinished response or answer (self or from peers)
	3.2	*Oth.As*	Other assertion: a statement or response that does not deliver the intended answer to the previous request. It includes (1) 'Bidding' statements disclosing a permission to answer or nominating oneself to speak, (2) an explanation for not participating or answering, and (3) an introduction response before the 'real' response
4. Resolution	4.1	*Ext.Exp*	Extended explanation: a statement giving detailed or modified assistance that may add new ideas or details to assist peers in self-restructuring what is being discussed, and it may contribute to a solution, answer, or comprehension of a problem
	4.2	*Ind.Cor*	Indirect correction: a more target-like reformulation of peers' previous utterances—both partial and complete

(continued)

Table 2 (continued)

	4.3	*Di.Cor*	Direct correction: explicit corrections with or without a metalinguistic explanation; a prompt eliciting an exact imitation or serving as an exemplary response to a wrong elicitation
	4.4	*Mo.Op*	Modified output: a reformulation of a previous utterance or a response to feedback (self or from peers) resulting in a more accurate or complex form or idea. Mo.Op is also identified by a more accurate response to clarification requests and confirmation checks

Note Readers interested more in the category details can read Tamah (2011) and Tamah et al. (2022)

Table 3 Scaffolding indicators found

No	Categories	Scaffolding indicators
1	Triggering event (TE)	1. *Direction Maintenance*
		2. *Referential Question*
2	Exploration (E)	3. *Clarification Request*
		4. *Confirmation Check*
3	Integration (I)	5. *Further Assertion*
		6. *Other Assertion*
4	Resolution (R)	7. *Extended Explanation*
		8. *Indirect Correction*
		9. *Direct Correction*
		10. *Modified Output*

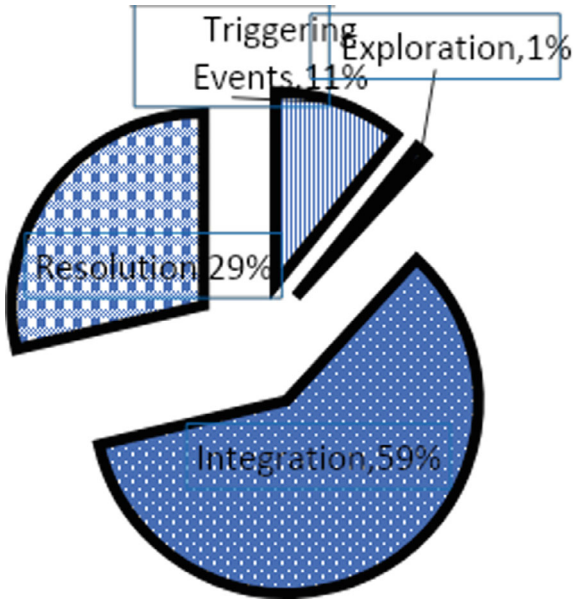

Fig. 1 Cognitive presence in the target community

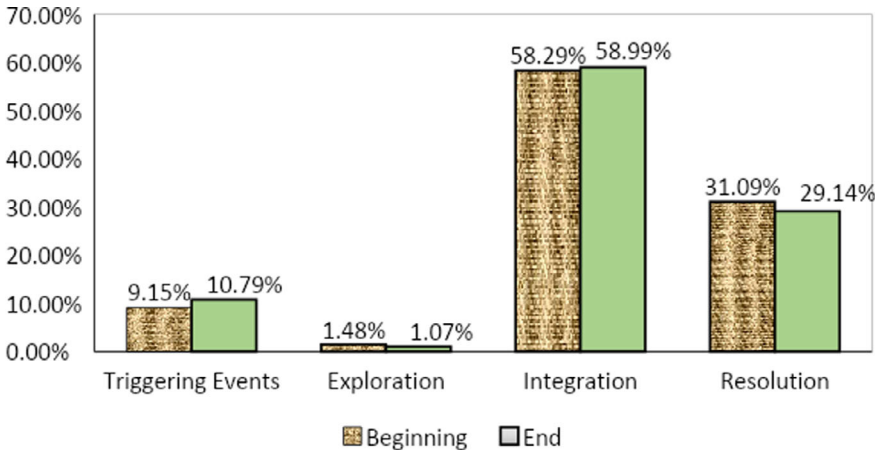

Fig. 2 Cognitive presence over time (Beginning vs. End)

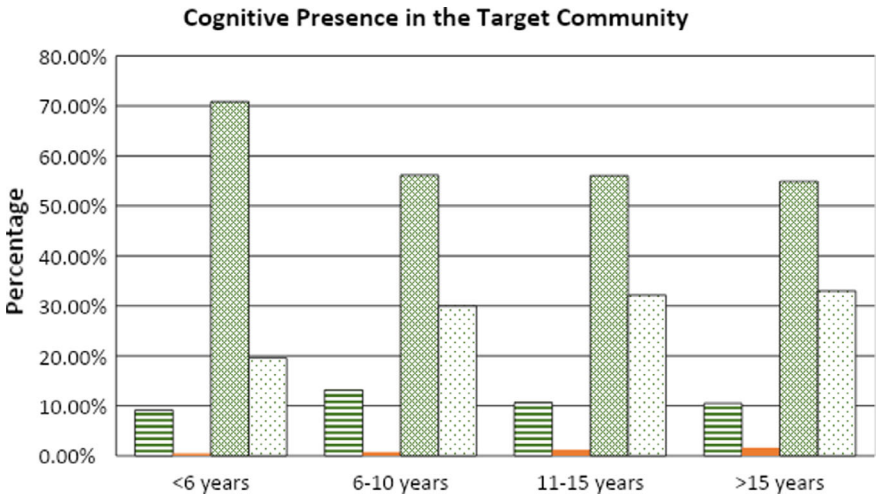

Fig. 3 Cognitive presence

full agreement with friends' opinions, whether restating complete or incomplete utterances (self-or other-repetition). The subsequent script provides further clarification.

> *Teacher M02: Yes, because this activity trains children's fine motor skills, cognition, creativity, and also art.*
>
> *Teacher E07: I totally agree with friends' opinion. but in my area of NTT especially in Ende there are no wild animals such as lions, so the video media and visual aids that are presented really help me in introducing wild animals to my students.*

Teacher S33: all of your opinions are absolutely correct. I'll also add that besides fulfilling all aspects of development, there are elements of science, math, and technology, [so] it stimulates children to think logically.

7.2 ANOVA Test (Number of Postings at the Beginning and End of Community Engagement vs. Groups)

Additionally, a statistical analysis utilizing one-way ANOVA (Strunk & Mwavita, 2022) was conducted to assess whether the number of postings varied among the four groups of teachers based on their length of teaching experience. Firstly, the data regarding the number of postings at the commencement of the discussion (during Learning Activity 1) were examined. The test results yielded a P-value of 0.919, which was greater than 0.05, indicating the failure to reject H0. In summary, there was no significant difference in the volume of postings at the outset among the groups of teachers.

Subsequently, the data concerning the number of postings at the conclusion of the discussion during Learning Activity 4 were scrutinized. The test revealed a P-value of 0.984, exceeding 0.05, indicating the non-rejection of H0. Consequently, there was no significant difference in the volume of postings at the conclusion among the groups of teachers involved. In summary, the one-way ANOVA test resulted in a P-value of 0.947 ($p > 0.05$), failing to reject H0. Subsequently there was no significant difference in posting frequency among the groups of teachers involved. Each group of teachers (those with < 6 years of teaching experience, those with 6–10 years, 11–15 years, and > 15 years) exhibited identical levels of engagement.

7.3 Interaction Plot

Figure 4 illustrates the interaction dynamics among the four groups of teachers based on their teaching experience length. Notably, interactions in triggering events and exploration, exploration and interpretation are classified as ordinal interactions, with no crossing lines indicating a consistent pattern. Conversely, integration and resolution are identified as disordinal interactions, marked by crosses indicating a pattern reversal (Strunk & Mwavita, 2022). Teachers in Group 1 exhibit the lowest resolution compared to their counterparts. Conversely, teachers in Group 4 demonstrate the highest activity levels in comparison to Groups 1, 2, and 3. The study highlights that experience plays a role in influencing the extent of activity, with senior teachers exhibiting greater engagement.

A noteworthy discovery is that, despite the ANOVA test results indicating no significant difference in posting outcomes among the various teacher groups, the Interaction Plot test unveils an impact of teaching experience on the quantity of

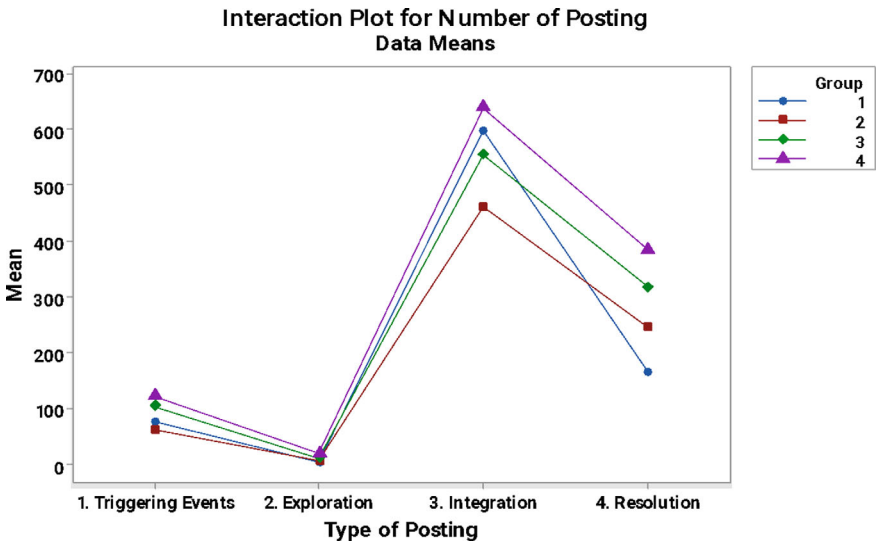

Fig. 4 Interaction plot (Influence of Teaching Length on Number of Postings)

activities. Essentially, there is a discernible tendency for the length of teaching experience to influence the activity number, with senior teachers displaying heightened involvement.

Figure 5 depicts the interaction patterns among different types of cognitive posts within groups of teachers based on teaching experience length. The identified interactions are categorized as ordinal, with no crossing lines indicating a consistent pattern (Strunk & Mwavita, 2022).

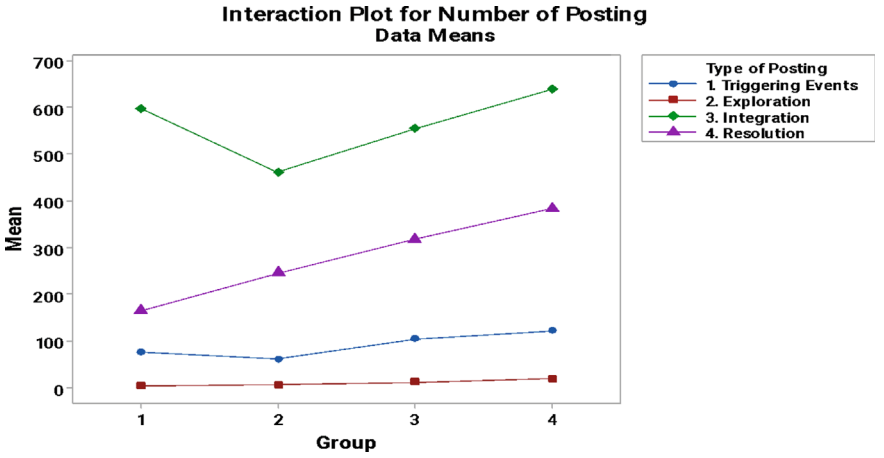

Fig. 5 Interaction plot (Cognitive Postings based on Teaching Length)

Notably, exploration activities appear consistent across all groups of teachers. Furthermore, there is a trend indicating that the more experienced teachers are, the higher their engagement in resolution activities. In terms of integration activities, teachers in Group 2 (with 6–10 years of teaching experience) were observed to be the least involved.

8 Discussion

The research aimed to assist teachers learn professionally by developing their Cognitive Presence to introduce STEM-oriented instruction. The findings indicate that the research partially aided educators of young learners in professional development by enhancing their Cognitive Presence, as revealed through the identified elements (Triggering, Exploration, Integration, and Resolution). Among these, Integration emerged most frequently in their pedagogical discussions, signifying substantial engagement as teachers responded to questions or requests related to ongoing topics. This prevalence could be attributed to the reflective guiding questions presented in the forum discussions. For a deeper examination of pedagogical practices in actual classrooms, it is suggested that future researchers conduct class observations.

The study highlights the absence of both Simple Assertion and Comprehension Check within the context of the examined 'community.' The nature of the community, being composed of fellow teachers rather than students, may account for this observation. Similarly, Erroneous Explanation, involving assertions that display false or incorrect information, did not manifest in this study, possibly influenced by the non-prescriptive nature of the discussed topics. The collaborative interaction indicating Cognitive Presence is intertwined with teaching presence, as emphasized by Garrison and Cleveland-Innes (2005). Moreover, social presence, contributing to the affective learning domain, plays a crucial role. To sustain meaningful engagement in a learning community, it is imperative to uphold the three elements of Cognitive, Social, and Teaching presences. A community of inquiry transcends mere information exchange, necessitating the nurturing of interaction and reflection, critical assessment of ideas, and the scaffolding and modeling of the process of critical inquiry (Garrison & Cleveland-Innes, 2005). Among Indonesian teachers of young learners, teachers with the least teaching experience, with less than 6 years of teaching experience, indicated a trend of increased engagement in online communication reflecting the growing digital involvement of today's youth.

9 Conclusion

Assisting ongoing professional development for teachers can be performed by engaging them in continuous learning so that they can enhance their skills and knowledge, leading to more rewarding and successful careers in education. Otherwise, inadequate professional development opportunities can restrict teachers' advancement. Therefore, educational institutions must prioritize continuous training and support for educators to create a positive and effective learning environment.

The study findings suggest that the research partially supported professional development for educators of young learners by enhancing their Cognitive Presence, as evidenced by the identified elements: Triggering, Exploration, Integration, and Resolution. Integration was the most frequently observed element in their pedagogical discussions, indicating significant engagement as teachers addressed questions or requests related to ongoing topics. As this prevalence likely stems from the reflective guiding questions presented in the forum discussions, Teaching Presence should inevitably ensure the presence of constructive guiding questions for reflections to appear in Cognitive Presence.

Acknowledgements The authors are indebted to the Indonesian government which provides the financial support. They also owe thanks to the two raters (Ms Trianawaty and Ms. Ignasia Indahwati) who have assisted in data coding.

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Final Thoughts

Wendy Boyd and Susanne Garvis

In the final section of this book, we reflect on the key themes that emerge across the eighteen chapters to help us focus on learning and care through pedagogical practices in early childhood settings. Across the chapters, it becomes clear that context and culture are specific in how teachers deliver pedagogical practices with young children and their families. The chapters also highlight that pedagogical practices are not in isolation, and are influenced by various other factors within a bigger systems' approach to early childhood education.

We begin by asking two important questions across the chapters as we create key meanings for consideration. Through the use of a word cloud to isolate word frequencies, we establish what the main ideas are around pedagogical practice. Specifically, we answer the question across the book of 'What is pedagogical practice'? By exploring the chapters in section one, we can see the importance of themes that emerge across multiple countries such as play, learning and practices. Key elements of child development also emerge such as well-being, development, cognitive and thinking. The importance of pedagogical practice to also include parents, home and families is also evident in the word cloud below, where pedagogical practices are considered to be in partnership with the home environment. Pedagogical practices also appear to be associated with notions of planning, aligning with key approaches, content and curriculum. Some pedagogical practices are also bound in tradition (such as play and social), while others are contemporary, including the notions of technology mediated and nature-play. Thus, the idea of pedagogical practices is diverse and bound by both historical and modern beliefs around young children's learning and development (Fig. 1).

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W. Boyd and S. Garvis (eds.), *Early Childhood Pedagogical Practices Across the World*,
https://doi.org/10.1007/978-981-96-2747-9_20

Fig. 1 Word cloud for pedagogical practices

Our second reflection is based on exploring the question, 'what makes practice possible?' within Sect. 2. Again across the chapters from different countries, we see the influence of the systems approach within early childhood education, where pedagogical practices are shaped by requirements around curriculum and framework that promote pedagogical practices. This may explain why certain words have also emerged such as prescriptive, transformative and lifelong. Pedagogical practices are informed by individual teacher actions of reflection, theoretical, thinking, advocating and efficacy to support learning and development. Early childhood teachers also draw upon the actions of others to help implement pedagogical practices with peer mentoring, communities of practice (COP) and having supportive leaders.

Key considerations are also around diversity contexts, identity and discourses that appear around specific cultural and contextual contexts.Query For this reason, key themes below have also emerged around supporting families and the importance of relational communities. This also shows that pedagogical practices are considered an interactional process (Fig. 2).

We now return to the original description of pedagogical practice that was shared in the beginning of the book:

Pedagogical practices are "the instructional techniques and strategies that allow learning to take place … and refers to the interactive process between teacher and learner and it is also applied to include the provision of aspects of the learning environment (including concrete learning environment, and the actions of the family and community)" (Siraj et al., 2002, p. 10).

From the two word clouds above, we see evidence of all of these areas in action within early childhood settings, including the interactive process, the learning environment and the community. We also see a variety of instructional techniques and strategies shared that are specific to the culture and context of the early childhood setting. This book has allowed examples of pedagogical practice to become known

Fig. 2 What makes practice possible?

and also explored the supports within early childhood settings that enable pedagogical practices. As such, we also start the conversations around pedagogical practices in early childhood education to help support the building of a foundation around pedagogical practices within early childhood contexts. The book has shown that while culture and context are important, themes emerge across countries showing similarities in practice.

1 Implications—what This Means in Terms of ECTs, Curriculum Frameworks and Policy

We conclude that pedagogical practices are diverse, context based and align with what the teacher brings to the learning environment. The teacher's contribution influences how the learning environment is structured. The teacher's approach to setting up the learning environment and the way the teacher approaches their pedagogical practices will influence the learning outcomes for children. The teacher's contribution is grounded in their understanding of how children learn and the pedagogies they choose to support children's learning. What the teacher does, and why, and how the children and families respond within that setting sits within the pedagogical approach.

Each country's early childhood curriculum framework for pedagogical practices shape the way the teacher structures the learning environment, their interactions with the children and colleagues, and families. Resourcing of the environment is managed by the teachers to align with the curriculum framework and each country's approach to early childhood. For example the chapter on loose parts highlights the resourcefulness of teachers to ensure that children have opportunities to learn in their context.

The strongest implication from these 18 chapters is that what the teacher brings to the early childhood context matters. To provide excellent learning opportunities for children, early childhood teachers need to have a strong understanding of pedagogical practices so that children's learning and development, and wellbeing, are supported through strong secure relationships with the children and families. Early childhood teacher education programs provide opportunities for the early childhood pre-service teachers to learn about pedagogical practices that are diverse and suitable to each context under the relevant curriculum framework.

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