Author(s): Asp, Eeva; Räikkönen, Eija; Rutanen, Niina; Aro, Tuija; Salmi, Paula; Laakso, Marja-Leena

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Declared Practices of Language Facilitation in Early Childhood Education and Care with Children Younger than Two Years

Eeva Asp[1] · Eija Räikkönen[2] · Niina Rutanen[3] · Tuija Aro[1] · Paula Salmi[4,5] · Marja-Leena Laakso[3]

Abstract

Early reciprocal language experiences are crucial for children's language development. Early childhood education and care (ECEC) has the potential to facilitate language development. However, knowledge on ECEC educators' actions in implementing early language facilitation is scarce. This study surveyed educators' declared practices of early language facilitation and its relationship with their educational background. Open-ended responses gathered from 644 Finnish ECEC educators were categorized by content and analyzed in relation to the educators' qualifications and work experience. The findings showed that when reporting on their practices, the educators typically did not focus on the child's communicative initiatives and reciprocal language. However, the responses of educators with a qualification in ECEC special education contained more focused content on child-led reciprocity. Moreover, both ECEC special education teachers and educators with experience in infant-toddler ECEC underlined the importance of interaction. The findings indicate a need to increase educators' awareness of their actions in facilitating children's early language skills. To achieve the educational and preventive rehabilitative potential of ECEC, it is crucial that centers both include ECEC special educators in their teaching staff and invest in educator training.

Keywords Content analysis · Early childhood education and care (ECEC) · Early language facilitation · Educators background · Infant-toddler

Introduction

Children's early linguistic experiences are crucial for their language development (King et al., 2021; Lytle & Kuhl, 2017). In addition to home care, early childhood education and care (ECEC) has an important role in supporting children's language growth including the potential to bridge gaps that may exist in the early language environment of children from different backgrounds (Walker & Carta, 2020; Walker et al., 2020). To achieve this objective, such support should include actions that facilitate children's language development (e.g., Degotardi, 2017). In the present study, childhood educators' declared practices on children's language facilitation were surveyed among Finnish ECEC

✉ Eeva Asp
  aspesu@student.jyu.fi

  Eija Räikkönen
  eija.m.raikkonen@jyu.fi

  Niina Rutanen
  niina.a.rutanen@jyu.fi

  Tuija Aro
  tuija.i.aro@jyu.fi

  Paula Salmi
  paula.h.salmi@nmi.fi

  Marja-Leena Laakso
  marja-leena.laakso@jyu.fi

[1] Department of Psychology, Faculty of Education and Psychology, University of Jyväskylä, P.O. Box 35, Jyväskylä FI-40014, Finland

[2] Faculty of Education and Psychology, University of Jyväskylä, Jyväskylä, Finland

[3] Department of Educational Sciences, Faculty of Education and Psychology, University of Jyväskylä, Jyväskylä, Finland

[4] Niilo Mäki Institute, P.O. Box 29, Jyväskylä FI-40101, Finland

[5] Department of Psychology and Logopedics, University of Helsinki, P.O. Box 21, Helsinki FI-00014, Finland

educators in relation to their professional qualifications and work background.

Adult Reciprocal Input as a Facilitator of Early Language Acquisition

Critical skills for later language development (phonetic discrimination, word mapping and comprehension) are acquired by the age of two years (e.g., Bergelson, 2020; Kuhl et al., 1992; Sanchez-Alonso & Aslin, 2022). The relationship between early spoken language interpretation and vocabulary growth is robust (Ellis et al., 2015; Fernald et al., 2006), forming a continuum to vocabulary mastery and word production and further proficiency in language skills (Marchman & Fernald, 2008). Receptive language skills are especially important in language development (Määttä et al., 2016; O'Neill et al., 2019). Thus, the early childhood period should be a priority for promoting language skills.

An adult's linguistic input is associated with a young child's developmental language outcomes (e.g., McGillion et al., 2013). Reactions to a child's communication initiatives, such as gaze, voice, babbling, gestures, word attempts or words, and responding to them in similar ways, reinforce and maintain turn-taking (e.g., Onnis, 2017). Such child-led reciprocal communication captures a child's attention and invites the child to engage in the continuum of linguistic turn-taking. An adult's consistent attention to a child's initiatives, including reinforcement, expansion, and naming of the child's expressions, facilitates the child's receptive and expressive language development (e.g., Paavola et al., 2005; Roberts & Kaiser, 2015; Romano & Windsor, 2020).

Early pre-linguistic (communication) skills reflect a child's early experiences of reciprocal communication and become the recourse for recognizing the need for additional language facilitation to prevent later language-learning difficulties (Vermeij et al., 2022; Visser-Bochane et al., 2020). Children who experience less language facilitation at home or show delays in their pre-linguistic development are those for whom ECEC is a setting where these linguistic child-led reciprocal experiences can and should be encouraged.

ECEC Facilitating Early Language Development

The quality of ECEC is strongly related to educator-child interaction (Pianta et al., 2020). Studies have shown that the quality and quantity of language facilitation in teacher-child interactive situations is generally low in pre-kindergarten (Cabell et al., 2013) and toddler classrooms (La Paro et al., 2014). In Finland, although we lack studies from infant-toddler classrooms, similar findings have been reported in ECEC groups of children over age 3 (Salminen et al., 2012). Some evidence exists on differences between educators in

their actions (Os, 2019). Some educators facilitate language by creating opportunities for mutual and sustained discussions, whereas others mainly use language to give instructions or for other pragmatic purposes when interacting with children. This leads to very different language learning experiences for the children depending on the educators' skills and opportunities to enrich and support their communication initiatives by replying to them, extending and giving a chance to continue on their turn again (Degotardi, 2017).

In addition to individual actions, educators differ in their beliefs about early language development. In some cases this can lead to practices that fail to facilitate language development (Degotardi & Gill, 2019; Lim & Lim, 2013). Another problematic issue concerns educators who perceive children as passively maturing at their own individual pace instead of as active learners (Degotardi & Gill, 2019). To effectively facilitate young children's language development by paying attention to and synchronizing their actions with children's communication skills requires that educators have sufficient understanding of children's language learning processes (see White et al., 2015). Educators who lack this knowledge are at risk of allowing children's existing language skills to define the frequency of their responsiveness, resulting in the more skillfully communicating children receiving constant feedback and responses from their educators (Degotardi et al., 2018) while less able and non-verbal children are easily left behind and deprived of linguistic stimulation (Hu et al., 2019). Thus, children who are already linguistically more developed receive more child-led reciprocal language facilitation than peers who are truly in need of it.

Hence, to use the potential of ECEC to ensure early language development for all children, it is crucial that educators understand the importance of early language facilitation and how it can best be implemented. Thus, where necessary, educators' understanding and opportunities to use facilitative means should be increased (Lorio & Woods, 2020).

Language Facilitation in the Finnish ECEC Context

The present study was conducted in Finland, where ECEC can be characterized as a combination of care, education, and teaching, that is aimed at laying a foundation for lifelong learning (Finnish National Agency for Education, [OPH], 2014). To increase the quality, viability, and parity of early childhood education nation-wide, the Ministry of Education and Culture has laid down a core curriculum for early childhood education that includes the making of an individual pedagogical plan for every child who attends ECEC (OPH, 2022). Although this core curriculum underlines the importance of the richness of language, its emphasis is on older children (Rutanen & Hännikäinen, 2019),

leaving considerable space for ECEC centers and educators to apply their professional expertise and knowledge on what constitutes appropriate language facilitation.

ECEC educators, with their diverse qualifications and educational backgrounds, are responsible for language facilitation in daily practice. An ECEC teacher in Finland is required to complete a bachelor's degree in early childhood education or a program of education leading to professional competencies in ECEC (60 credits) (Finlex, 2018). ECEC teacher training programs at the bachelor's level include studies on both child development and pedagogies for young children, including support for language learning. However, universities have the freedom to decide the emphases and content of their curricula. Social pedagogues with a bachelor's degree in social services and health care from universities of applied sciences may also work as ECEC teachers. An ECEC team will also include child carers with a secondary-level vocational degree in social services and health care or other comparable qualifications. In turn, ECEC special education teachers with an additional master's degree in special education, have a consultative role in ECEC. Given this diversity in the educational background of ECEC teachers and the lack of research on the content of early language facilitation in ECEC, it is important to study whether and, if so how, they are associated with ECEC teachers' understanding and implementation of early language facilitation practices.

The Present Study

Ideally, all children in ECEC should at all times receive language facilitation appropriate to their individual level of development. However, knowledge on the current state of this support in ECEC and whether or not educators' educational and working life background is associated with the means they use to facilitate language development is very limited. This study sought to contribute to knowledge in this understudied domain. Although the facilitation of expressive and receptive language occurs simultaneously early in language development (e.g., Kuhl et al., 2014; Onnis et al., 2018), speech perception and receptive language set the stage for later language learning (e.g. Ellis et al., 2015; Fisher, 2017; O'Neill et al., 2019). Therefore, in this study, we focused particularly on receptive language and speech comprehension. The research questions were:

1. What means of language facilitation do early childhood educators consider effective in supporting the receptive language development of children under age two? To what extent do educators include child-led reciprocal (pre-) linguistic communication in their means of language facilitation?

2. How are educators' educational qualifications and work experience related to the means of the language facilitation they report using with children under age two?

Due to parental allowance (National Pension Institute [Kela], 2022) the minimum age for children entering ECEC in Finland is nine months. Thus, early language facilitation in the present study concerns children aged 9 to 24 months.

Materials and methods

Participants and Data Collection

In April 2021, electronic survey data were gathered from educators working in ECEC centers. Recruitment was aided by teachers' unions, who conveyed the invitation to participate in the study to the target population. A link to the survey, which included a cover letter and privacy statement, was emailed to union representatives. A total of 644 educators responded to the survey. Of these individuals, 86.8% were currently working in an ECEC centre (for children aged from nine months to six years), 0.8% in family day care, 0.8% in open ECEC (for children in parental care) and 13.8% in other settings (mainly administration, studying, projects, parental leave, schools and as consultants in more than one ECEC unit). Some participants reported working in more than one unit, resulting in a total of settings in excess of 100%.

The survey was developed by the authors, based on the literature on the facilitation of early language development. It was piloted with 20 educators before the data were gathered. The survey included questions on the participants' current workplace, educational qualifications, geographical work area, length of work experience, and work experience with infant-toddler ECEC groups. As part of a larger project, the survey also covered topics on early language facilitation, its potentiality and importance in ECEC, participant's experiences of children's early language development, situations in which they had supported or monitored language development, and self-assessed knowledge on early language development.

Content Analysis

Analysis of the first research question was based on the participants' responses to the following open-ended question: 'What means do you consider best for facilitating receptive language and speech comprehension in children under the age of two? For example, what concrete methods would you state on the child's individual early childhood education plan?'.

Data were analyzed using qualitative content analysis (Elo & Kyngäs, 2008; Kyngäs, 2020). Depending on the type of the response, the unit of analysis (Elo & Kyngäs, 2008) was a word or sentence. The number of language facilitation means mentioned by the participants ranged from 0 to 21 and the length of responses from 6 to 1 099 characters.

First, without using predetermined categories and after gaining familiarity with all the units of analysis, the first author interpreted, compared, and sorted them into 52 tentative subcategories. Categorization in this phase was based on the child's language learning in educator-child interactions, the child's emotional well-being, and the content of ECEC activity along with its settings, methods, actions, environment, educators, administration, and co-operation. After the tentative categorization, all authors together discussed the subcategories and refined the coding system. The data included three types of ambiguous responses. First, different participants used the same terms for different purposes shown by the context the words were used (e.g. the term "saying" in one participant's response could mean describing out loud what the child was doing, while in another participant's response it could mean asking the child to name things). Second, mostly using the passive voice, some participants did not clarify whether they were referring to educator-child interaction or entire (small) group interaction in their responses (e.g., reading, singing). Thus, they did not give clear information about the actors involved (child or children, adults), and/or possible reciprocity in the action. Finally, some participants used list-like responses by referring to a means of facilitation by one word (e.g., "pictures") without clarifying the purpose of the activity. In the case of these ambiguous responses, the situational context was used to aid interpretation where possible. After discussing the emerging subcategories and coding system, the responses were analyzed in two steps.

By the process of familiarization, tentative categorization, and the coding principle mutually agreed upon by the authors, a deductive analysis of the data was conducted by the first author. The core element of the analysis was child-led reciprocal linguistic communication, which included the educator naming and expanding the child's communicative expression, target of attention or current action and then handing the communication turn back to the child. The responses related to this element were assigned to category 1 (Table 1), which was further divided into four subcategories. Means of facilitation that were not described precisely enough to be included in category 1 and did not fulfill the criteria of child-led reciprocity but were close to it in terms of content were assigned to category 2, which had six subcategories (Table 1). These responses included recognizable elements of educator-child linguistic communication

at a more general level in situations targeted at language learning.

Analysis of the rest of the data was continued by utilizing an inductive approach, which yielded an additional four main categories. The features of these categories were: the child was central in the response but language was not; ECEC was the topic of the response rather than a child or language reciprocity; the topic of the response was administrative matters concerning ECEC services; and the response did not include information relevant to the question asked (Fig. 1).

In total, six main and 21 subcategories were identified. As the six main categories differed from each other in how closely or loosely the means of language facilitation represented child-led reciprocal linguistic communication, we investigated how the child and the description of language use were linked in the responses and how this was related to the educator's actions. To illustrate their proximity to child-led reciprocal linguistic communication, the main categories were labelled 'spheres' (Fig. 1). Categories 1 and 2 were the 'core spheres'. Participants' responses more loosely related to the core content were assigned to spheres at a distance from it. Thus, the spheres furthest from the center contained responses focused on administrative factors that did not include child involvement or language reciprocity and responses that were unconnected to the question. The spheres were then named as shown in Fig. 1.

Author 1 coded all the responses to their category and in the case of core spheres 1 and 2 also to subcategories. The coding was done twice for controlling mistakes. The inter-rater reliability of the coding system, assessed for 20% of the data, using Krippendorff's alpha, was 0.80 (confidence interval: 0.77–0.84; Hayes & Krippendorff, 2007) as verified by a master's student majoring in special education.

Notions

Use of the same means of facilitation for different purposes in the educators' responses resulted in their ending some of them being assigned to different categories. For example, if the means of facilitation was a 'picture' enabling the child's expression, it would end up in sphere 1, whereas if it was used in the creation of multimodality or assisting the child's comprehension it would end up in sphere 2, and, if used in a list-like way in sphere 4. If the word 'play' was the only word in the response or cited as a pedagogical method, it was placed in sphere 4 (ECEC environment), whereas if the educator was using play as a way of developing language comprehension or symbolic play, it was assigned to sphere 2 (general language facilitation). Because educator-child linguistic communication can be considered a component of shared reading, this use of reading was placed in sphere

Table 1 Spheres of early language facilitation

Sphere name (% of the educators providing at least one mean for the sphere)	Subcategories	% of educators providing a mean for the subcategories of the spheres 1 and 2	Examples
SPHERE 1. Child-led reciprocal linguistic communication (23)	a = Noticing and reacting to the child's communicational initiatives (and responding to them) b = Giving the child a turn in communication and encouraging and/or enabling their speech or other communicational expression c = Naming the target of the child's attention/ pointing/ action (and/or repeating/expanding the child's expression) d = Ensuring or clarifying the intelligibility of the child's expression (continuum in turn-taking)	13.4 9.3 8.2 1.1	*a : The sensitive adult who **observes the child and responds to initiatives*** *b : He/she is also praised and encouraged to tell and communicate by him/herself* *c : When the child says e.g., "oo" and shows a lamp, we say, "Yes, there is a lamp there. Glad you noticed. Do you think it`s fine?"* *d : We repeat the words a child has produces, **while making sure his/her message gets through***
SPHERE 2. General language facilitation (75.3)	a = Purposeful use of gaze, gestures, face expressions, tone of voice, face-to-face contact, and all other meaningful additions to enrich the communicational situation and its multimodality without the accuracy of sphere 1. Encouraging or supporting the development of symbolic play is also included here to help receptive language development b = All the (list-like) interaction, communication, and joint attention without clear reference to the child's involvement or their role in it and/or clear reference to sphere 1 c = The educator answering the child`s questions and then asking the child questions, a process that facilitates language development with young children, is not clearly evident d = Ensuring and supporting the child`s comprehension of speech in the ECEC environment or learning to comprehend it in daily situations with the help of situational and concrete speech and/or object or AAC-communication in adult action without the mention of turn-taking e = Ensuring positive experiences of language and/or interaction as well as creating and then maintaining the child`s motivation in mutual turn-taking f = Enabling the child to be involved in the communication in daily group situations by creating opportunities for educator-child communication, tempting the child into it, and/or maintaining the child's interest in it without reference to sphere 1	14.4 52.8 2.6 41.1 1.6 10.2	*a : Making eye contact with the child when interacting* *a : Enriching the play* *b : Sensitive interaction* *b : Examining the things of interest* *b : Interaction between an adult and a child* *c : The child is asked questions* *d : Shows concretely what the words mean, e.g., says "Put on gloves" and takes the gloves and even points to the child`s hands.* *d : When things are discussed/ explored (especially new things), what is being discussed is also shown.* *e: Valuing the child`s native language* *f : Discussing with the child, e.g., at the time of dressing*
SPHERE 3. Child´s well-being (30.4)	a = Creating a good atmosphere in the ECEC group b = Investing in a good relationship between the educator and child by offering physical and emotional proximity while the educator is nearby and available for the child. Educator`s attitude, commitment, motivation and consistency in encountering the child is important. c = Supporting child's emotional growth, the child's participation as a social group member, and the child's holistic well-being, confidence, and self-regulation. Utilizing child-specific issues (e.g., developmental level and target of interest) in planning and executing the education with the child and in choosing an appropriate level for the child's instruction.		*a : Displaying genuine joy* *b: Having a positive attitude even when there are challenges* *b : Having a good relationship to the child* *c: Strengthening the child`s body awareness and self-image* *c: Naming the emotions the child displays.* *c: Utilizing the child`s interests and strengths* *c: Documenting the child's speech and language development*

Table 1 (continued)

Sphere name (% of the educators providing at least one mean for the sphere)	Subcategories	% of educators providing a mean for the subcategories of the spheres 1 and 2	Examples
SPHERE 4. ECEC environment (90.2)	a = Learning environment: its familiarity, security, routine, organization, and sound. b = Pedagogical methods and organizing of ECEC activities: repetition, modeling, operating in the zone of proximal development, positive pedagogy, peer learning, facilitation of learning (e.g., by making it more interesting), play, content of the core curriculum, small group activity, full-time pedagogy, utilizing of existing organizational structures in education, no rush, and good organization in all operation. c = A linguistically rich ECEC environment, including list-like AAC, nonverbal, art, rhythm, music, literacy, gross- and oral motor, sound listening and recognition, television and tablet computer, cognitive skills, themes and vocabularies, ready-made commercial materials for language teaching. Children hear rich language in the environment.		a : *Clear daily routines, where the child can participate independently* b : *An adult organizes play pairs where the other of the children is more linguistically advanced* c : *Picture communication, signs, and quick drawing* c : *(Educators) use linguistically rich and orthodox language* c : *Use of literacy sources (e.g., picture books, rhymes)*
SPHERE 5. Framework and co-operation (11.8)	a = (Mainly staff) resources b = Multi-professional co-operation and support c = Educational partnership with guardians or parental guidance d = Educator-related factors that highlight the quality of education (such as the educator's qualification, knowledge, understanding, general attitude, commitment or work ethic while excluding the educator's sensitivity in the relationship with the child, which is included in sphere 3)		a : *Smaller group size* b : *Intervention happens early enough; nowadays, when you contact child health care services, you are told to wait.* c : *Co-operation with the home environment through certain operative principles, e.g., screen time, presence of the adult (parent), and interaction/reading.* d : *Qualified staff*
SPHERE 6. Unconnected responses (0.9)	a = The responses in which the educator does not know or cannot write anything		a : *I cannot tell* a : *I cannot write anything in here*

Spheres and their subcategories identified from participating educators' responses on language facilitation means

2 (general language facilitation) while mentions of books or reading were assigned to sphere 4 (the ECEC environment).

Quantitative Variables and Analyses

The second research question focused on the relationship between educators' professional qualifications and work experience and their declared practices of early language facilitation. Here, the unit of analysis was the participating educator. The two core spheres of language facilitation were included in the analysis, as they were considered the most influential for the child's language outcome (see, e.g., McGillion et al., 2013). Based on the results of the analysis of the first research question, a dichotomous variable for each subcategory in spheres 1 and 2 was formed. This resulted in four dichotomous variables for sphere 1 and six dichotomous variables for sphere 2. Educators scored the value of 1 if they had provided a means for reflecting on a certain subcategory and 0 if not. Moreover, a sum score for the dummy variables of each core sphere was computed.

These total scores reflected the breadth of the educator's preferred means of language facilitation in a specific sphere.

Educators' academic qualifications were measured with two variables. The first variable was the educator's *highest educational qualification in the field of ECEC*, which was categorized into four categories: 1 = no qualification in ECEC; 2 = vocational upper secondary education in ECEC (e.g., child carer); 3 = a lower tertiary-level qualification in social services and health care (e.g., from a university of applied sciences); and 4 = a bachelor's degree in education (from a university, with a major in early childhood education, including 60 credits of pedagogical studies). The second variable was *an additional qualification in early childhood special education* (0 = no, 1 = yes).

Work experience was also measured with two variables. The first, *length of work experience*, was measured with five categories: 1 = less than 5 years; 2 = 5 or more but less than 10 years; 3 = 10 or more but less than 20 years; 4 = 20 or more but less than 30 years; and 5 = 30 or more years of experience. The second variable, *experience of working*
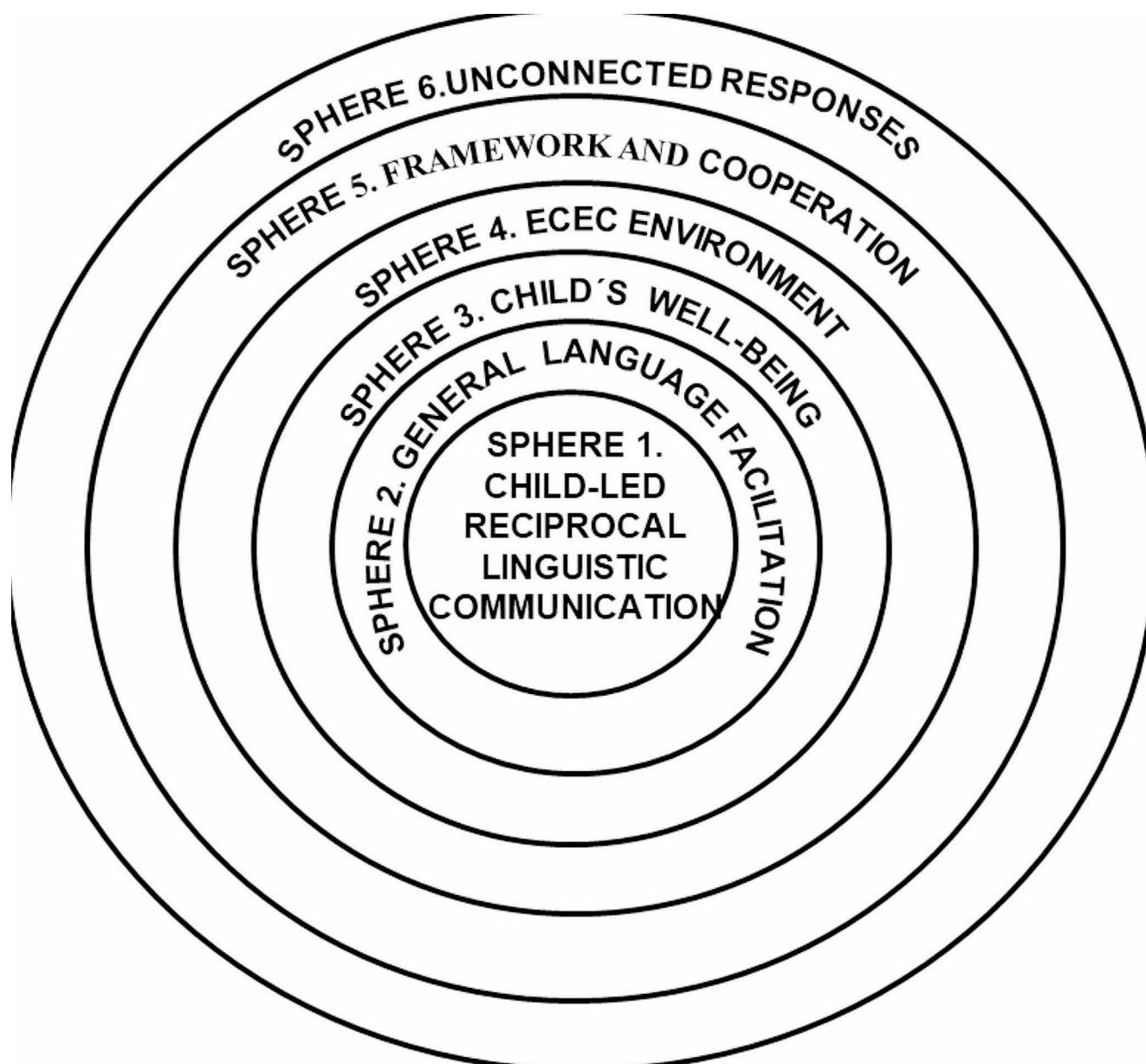
Fig. 1 Sphere structure of educator-reported practices related to the facilitation of early language skills in ECEC

with infant-toddler groups in ECEC, was coded as $0 =$ no, $1 =$ yes.

Each subcategory (treated as a dichotomous variable) was analyzed separately, using cross-tabulation and the χ^2 test. The differences between participants' total test scores for the background variables were analyzed using the Mann-Whitney U test or Kruskal-Wallis test with Cohen's d value (weak $0.20 \leq d < 0.50$, moderate $0.50 \leq d < 0.80$, and strong $d \geq 0.80$) or Cramer's V value ($df = 1$: weak $0.10 \leq V < 0.30$, moderate $0.30 \leq V < 0.50$, and strong $V \geq 0.50$; $df = 3$: weak $0.06 \leq V < 0.17$, moderate $0.17 \leq V < 0.29$, and strong $V \geq 0.29$; $df = 4$: weak $0.05 \leq V < 0.15$, moderate $0.15 \leq V < 0.25$, and strong $V \geq 0.25$), respectively, as the

measure of effect size (Cohen, 1988). The correlations between the educators' background variables are displayed in Appendix 1.

Results

Categorized Language Facilitation Means Produced by the Educators

First, the educators' declared practices of early language facilitation were examined. Six main categories of responses were identified, coded, and labeled as 'spheres'

to differentiate their proximity from child-led reciprocal linguistic communication.

Table 1 shows the main categories/spheres, subcategories, and examples of each subcategory. The percentages depicted in each main category/sphere and subcategory in spheres 1 and 2 refer to the proportion of educators who mentioned a mean of language facilitation in that (sub)category. Due to the variety of means stated by the educators, their responses could be categorized in more than one (sub) category. However, 21% of the participating educators did not state any content that could be assigned to core spheres 1 or 2.

Core Sphere 1: Child-Led Reciprocal Linguistic Communication

Sphere 1 consisted of responses showing that educators considered the child as active or taking the initiative in communicating and/or that reciprocal linguistic communication with continuity and clarity in learning. The four subcategories comprising Sphere 1 contain responses in which the educator reacts to a child's initiative, repeats/reframes, and expands these and hands the turn back to the child (Table 1). Reacting to the child's initiative by responding, repeating, and/or expanding the child's expression was rarely mentioned explicitly; hence, 'responding' was marked in parenthesis.

Core Sphere 2: General Language Facilitation

Sphere 2 consisted of responses describing more general expressions of educator-child interaction without specified content or reference to the child's turn (Table 1). With its six subcategories, this sphere encompassed joint attentional moments between the educator and the child, efforts to support or ensure speech comprehension in everyday situations, positive experiences for the child when using language and supportive of the development of the pre-linguistic skills that are related to receptive language (e.g., symbolic play, gestures, pointing, gaze, and linguistic multimodality) (Määttä et al., 2016).

Sphere 3: Child's Well-being

Sphere 3 comprised responses that were not language-specific but instead consisted of holistic support for a child's well-being, growth, and development (Table 1). The three subcategories included mentions of the importance of creating a good atmosphere, supporting children's well-being and emotional growth, creating a positive relationship between child and educator, and considering the child's interests and needs. Although language facilitation was not explicitly described in this response sphere, the child was.

Sphere 4: The ECEC Environment

Sphere 4 responses were related to the ECEC environment and activities more broadly (Table 1). The educator's actions were described in a general manner without the child's role being articulated and/or actions were not precisely described in relation to language facilitation. With three subcategories, Sphere 4 displayed the richness of the ECEC environment, including all its activities, educational methods, and references to the core curriculum (OPH, 2022). List-like means were also assigned to this sphere (excluding Sphere 2, the subcategory b), as their purpose was not explained and hence, they could not be assigned to any one of Spheres 1–3.

Sphere 5: Framework and Co-operation

Sphere 5 consisted of responses concerning ECEC's operational framework and co-operation among adults (Table 1). Its subcategories were administrative leadership, resources, co-operation in and outside of ECEC, parental guidance and co-operation, and matters related to the educator's professionalism and the quality their work. The sphere did not include descriptions of educators' activities with children or language facilitation.

Sphere 6: Unconnected Responses

Sphere 6 responses lacked content relating to the question asked (Table 1) but were nevertheless included in the analysis.

The Relationship between Educators' Backgrounds and Declared Practices of Early Language Facilitation

For the second research question, the relationship between the educators' background factors and their responses on early language facilitation was analyzed. The focus was on the core spheres 1 and 2. As shown in Table 2, educators' professional qualifications were not associated with their responses in any specific subcategory of Sphere 1 or with the total number of subcategories of means in Sphere 1 (child-led reciprocal linguistic communication). However, having a qualification in special education was associated with the means mentioned in Sphere 1 in the subcategories (a) *noticing and reacting to the child's communicational initiatives (and responding to them)* and (b) *turn for the child* and in the total number of subcategories of means, but not with the subcategories (c) *naming the target of the child`s attention*

Table 2 Sphere 1 child-led reciprocal linguistic communication by educators' background variables ($N = 644$)

Background variables	Sphere 1: Child-led reciprocal linguistic communication								
	1 A		1B		1 C		1D		Total 1 A–1D
	n	%	n	%	n	%	n	%	M (SD)
Group of education (n)									
no ECEC qualification (42)	10	23.8	1	2.4	1	2.4	0	0	0.29 (0.46)
Social/health field professionals (ECEC qualification) (200)	22	11.0	14	7.0	18	9	0	0	0.27 (0.65)
Secondary education for nurses (ECEC qualification) (39)	2	5.1	4	10.3	1	2.6	0	0	0.18 (0.56)
BA or MA level qualification from a university, major: early childhood education (363)	52	14.3	41	11.3	33	9.1	7	1.9	0.37 (0.72)
Test result	$\chi^2(3) = 7.50$, $p = .057$, $V = 0.11$		$\chi^2(3) = 5.38$, $p = .146$, $V = 0.09$		$\chi^2(3) = 4.07$, $p = .254$, $V = 0.08$		$\chi^2(3) = 5.48$, $p = .140$, $V = 0.09$		$\chi^2(3) = 6.50$, $p = .090$, $d = 0.15$
Work experience (n)									
less than 5 years (74)	13	17.6	4	5.4	3	4.1	1	1.4	0.28 (0.56)
5–9 years (78)	10	12.8	8	10.3	9	11.5	1	1.3	0.36 (0.68)
10–19 years (127)	15	11.8	10	7.9	13	10.2	3	2.4	0.32 (0.69)
20–30 years (152)	24	15.8	18	11.8	14	9.2	0	0	0.37 (0.73)
more than 30 years (213)	24	11.3	20	9.4	14	6.6	2	0.9	0.28 (0.66)
Test result	$\chi^2(4) = 3.00$, $p = .558$, $V = 0.07$		$\chi^2(4) = 2.88$, $p = .578$, $V = 0.07$		$\chi^2(4) = 4.48$, $p = .344$, $V = 0.08$		$\chi^2(4) = 3.71$, $p = .447$, $V = 0.08$		$\chi^2(4) = 1.76$, $p = .780$, $d = 0.12$
Work experience: under 2-year-olds in ECEC (n)									
no (86)	11	12.8	6	7	8	9.3	0	0	0.29 (0.53)
yes (558)	75	13.4	54	9.7	45	8.1	7	1.3	0.32 (0.70)
Test result	$\chi^2(1) = 0.27$, $p = .869$, $V = 0.01$		$\chi^2(1) = 0.64$, $p = .423$, $V = 0.03$		$\chi^2(1) = 0.15$, $p = .697$, $V = 0.15$		$\chi^2(1) = 1.09$, $p = .296$, $V = 0.41$		$U = 23525.50$ $p = .691$, $d = 0.02$
Special education teacher (n)									
no (534)	57	10.7	44	8.2	42	7.9	6	1.1	0.28 (0.64)
yes (110)	29	26.4	16	14.5	11	10	1	0.9	0.52 (0.80)
Test result	$\chi^2(1) = 19.41$, $p = <0.001$, $V = 0.17$		$\chi^2(1) = 4.29$, $p = .038$, $V = 0.08$		$\chi^2(1) = 0.55$, $p = .458$, $V = 0.03$		$\chi^2(1) = 0.04$, $p = .843$, $V = 0.01$		$U = 34643.50$ $p < .001$, $d = 0.24$

Note Subcategory 1 A: Noticing and reacting on child`s communicational initiatives (and responding them), 1B: Turn for the child, 1 C: Naming the target of child´s attention, 1D: Clarifying the child´s expression

or (d) *clarifying the child`s expression*. Moreover, neither the length of the educators' work experience nor their experience of working with infant-toddler groups in ECEC was associated with their declared means of language facilitation in Sphere 1 or with the total number of subcategories of means in Sphere 1.

As in Sphere 1, the educators' qualifications were not associated with any specific subcategory of the responses included in Sphere 2 (general language facilitation) or with the total number of subcategories of means in Sphere 2 (Table 3). However, having a qualification in special education was associated with educators' declared means of language facilitation in Sphere 2: ECEC special education teachers had more responses in the subcategories (a) *multimodality of language and pre-linguistic receptive language skills*, (b) *general communication and joint-attention*, d)

comprehensive speech support in daily situations, and a larger total number of subcategories of means, but not in the subcategories (c) *questions and answers*, e) *offering positive experiences of language*, or f) *turn-taking situations*. The length of work experience was related only to the subcategory (a) *multimodality of language and pre-linguistic receptive language skills* insofar as the educators with the shortest and longest experience reported more responses than the educators with 10 to 20 years of work experience. Having experience with infant-toddler groups in ECEC was associated with reporting responses in the subcategory (b) *general communication and joint-attention* and with the total number of subcategories of means in Sphere 2.

Table 3 Sphere 2 General language facilitation by educators' background variables ($N=644$)

Background variables	Sphere 2: General language facilitation													
	2 A		2B		2 C		2D		2E		2 F		Total 2 A–2 F
	n	%	n	%	n	%	n	%	n	%	n	%	M (SD)
Group of education (n)													
no ECEC qualification (42)	8	19	22	52.4	1	2.4	15	35.7	1	2.4	4	9.5	1.21 (1.05)
Social/health field professionals (ECEC qualification) (200)	27	13.5	99	49.5	6	3	75	37.5	3	1.5	24	12	1.17 (0.99)
Secondary education for nurses (ECEC qualification) (39)	1	2.6	17	43.6	3	7.7	13	33.3	0	0	2	5.1	0.92 (0.84)
BA or MA level qualification from a university, major: early childhood education (363)	57	15.7	202	55.6	7	1.3	162	44.6	6	1.7	36	9.9	1.29 (1.05)
Test result	$\chi^2(3)=5.79$, $p=.123$, $V=0.10$		$\chi^2(3)=3.39$, $p=.336$, $V=0.07$		$\chi^2(4)=4.70$, $p=.195$, $V=0.09$		$\chi^2(3)=4.41$, $p=.220$, $V=0.08$		$\chi^2(3)=0.83$, $p=.842$, $V=0.04$		$\chi^2(3)=1.85$, $p=.605$, $V=0.05$		$\chi^2(3)=5.62$, $p=.132$, $d=0.13$
Work experience (n)													
less than 5 years (74)	15	20.3	37	50	1	1.4	30	40.5	0	0	5	6.8	1.19 (0.95)
5–9 years (78)	10	12.8	32	41	1	1.3	38	48.7	1	1.3	4	5.1	1.10 (0.89)
10–19 years (127)	8	6.3	64	50.4	3	2.4	52	40.9	3	2.4	11	8.7	1.11 (0.93)
20–30 years (152)	27	17.8	91	59.9	3	2	59	38.8	2	1.3	22	14.5	1.34 (1.09)
more than 30 years (213)	33	15.5	116	54.5	9	4.2	86	40.4	4	1.9	24	11.3	1.28 (1.08)
Test result	$\chi^2(4)=10.56$, $p=.032$, $V=0.13$		$\chi^2(4)=8.15$, $p=.086$, $V=0.11$		$\chi^2(4)=3.42$, $p=.490$, $V=0.07$		$\chi^2(4)=2.25$, $p=.689$, $V=0.06$		$\chi^2(4)=1.95$, $p=.745$, $V=0.06$		$\chi^2(4)=6.74$, $p=.150$, $V=0.10$		$\chi^2(4)=3.18$, $p=.528$, $d=0.07$
Work experience: under 2-year-olds in ECEC (n)													
no (86)	11	12.8	32	37.2	2	2.3	31	36	1	1.2	9	10.5	1.00 (0.97)
yes (558)	82	14.7	308	55.2	15	2.7	234	41.9	9	1.6	57	10.2	1.26 (1.02)
Test result	$\chi^2(1)=0.22$, $p=.640$, $V=0.02$		$\chi^2(1)=9.67$, $p=.002$, $V=0.12$		$\chi^2(1)=0.04$, $p=.845$, $V=0.01$		$\chi^2(1)=1.07$, $p=.302$, $V=0.04$		$\chi^2(1)=0.10$, $p=.753$, $V=0.01$		$\chi^2(1)=0.01$, $p=.943$, $V=0.003$		$U=27682.00$, $p=.15$, $d=0.18$
ECEC special education teacher (n)													
no (534)	68	12.7	270	50.6	14	2.6	204	38.2	7	1.3	50	9.4	1.15 (0.97)
yes (110)	25	22.7	70	63.6	3	2.7	61	55.5	3	2.7	16	14.5	1.62 (1.17)
Test result	$\chi^2(1)=7.37$, $p=.011$, $V=0.11$		$\chi^2(1)=6.26$, $p=.012$, $V=0.10$		$\chi^2(1)=0.00$, $p=.950$, $V=0.00$		$\chi^2(1)=11.21$, $p<.001$, $V=0.13$		$\chi^2(1)=1.20$, $p=.274$, $V=0.43$		$\chi^2(1)=2.66$, $p=.103$, $V=0.06$		$U=35.978$. $p<.001$, $d=0.30$

Note Subcategories 2 A: Multimodality of language and pre-linguistic receptive language skills, 2B: General communication and joint-attention, 2 C: Questions and answers, 2D: Comprehensive speech support in daily situations, 2E: Offering positive experiences of language, 2 F: Situations of turn-taking

Discussion

Effective child-led reciprocal language facilitative actions ECEC are a resource that can serve early language learning experiences for young children with diverse home environments (see Walker et al., 2020). The current study showed that although many of the educators had a university-level degree in ECEC or in special education in ECEC, their declared practices of early language facilitation were frequently ambiguous and inconsistent. However, compared to the other educators in the sample, the ECEC special education teachers produced more specific content on effective means of language facilitation.

Early Language Facilitation in ECEC

The examination of ECEC educators' declared practices of early language facilitation yielded six main categories (spheres) of responses, indicating that their outlook on early language facilitation was diverse. Moreover, in line with previous studies (Degotardi & Gill, 2019; Lim & Lim, 2013), personal beliefs and experience alongside or instead of professional knowledge, seem to explain the multidimensionality found in declared practices of facilitating early language development.

Child-led Reciprocal Linguistic Communication in ECEC

The educators with responses included in Sphere 1 (child-led reciprocal linguistic communication) showed a rich understanding of effective practices of early language facilitation (see White et al., 2015). However, most of the educators did not explicitly mention child-led reciprocal linguistic communication as a salient means of early language facilitation. That is, they did not refer to child initiatives, adult responses (and expansions), and/or handing the communication turn back to the child. Instead, these educators used more general terms for educator-child communication, such as 'good/sensitive interaction' (Sphere 2, general language facilitation). Thus, even if they did not exhaustively clarify the content of language facilitation in educator-child interactions, they perceived language or speech as important.

The risk of a child's language skills impacting the educator's linguistic response (Degotardi et al., 2018; Hu et al., 2019) was also seen in the present study. Educators rarely reported promoting, responding to and interpreting a child's tentative communicational initiative (Sphere 1, child-led reciprocal linguistic communication). This is in line with earlier findings indicating that preverbal communicational initiatives and expressions are easily missed by educators unless they are sensitively listening for them (Nyland, 2009). Thus, to promote a child's reciprocal communicative opportunities, educators should orientate themselves to the child's gaze, sounds, and gestures, even if these are not yet strongly developed, and should utilize all the basic care interactions with the child during the child's time in ECEC (subcategory 2f). To accomplish this objective, educators' understanding of the importance of early language development and knowledge of means to facilitate it as well as their ability to notice children who do not yet generally communicate verbally must be enhanced. If not, language facilitation will not fulfill its purpose of equalizing children's experiences of reciprocity but will mainly target children whose expressive language skills are already well-developed (see Bleses et al., 2020).

It is particularly noteworthy that the educators participating in this study rarely provided information on how they respond to a child's initiatives (Sphere 1). The type and quality of an educator's response to a child's initiatives (e.g., McGillion et al., 2013) must include an opportunity for the child to learn the language (e.g., Roberts & Kaiser, 2015). Efforts to increase educators understanding of language development should focus especially on this issue, as reacting to a child's initiatives is pointless if the educator's input lacks appropriate content. Thus, even if the child is given the experience of being noticed, opportunities for language facilitation and positive learning outcomes will be missed (see, e.g., Os, 2019).

Language Facilitation with Diverse Means

In addition to the core spheres, four more main categories were identified in this study. One third of the educators' responses contained content assignable to Sphere 3 (the child's well-being). These educators wrote specifically about the child's well-being, demonstrating their understanding of the importance of emotionally warm relationships, the role of language in forming these, and vice versa. However, while a good relationship with a child lays a foundation for the child's learning (Dalli et al., 2011), it is not a sufficient condition for language facilitation, as it does not automatically promote children's learning.

As also found by Degotardi and Gill (2019), the present educators mostly conceived of language facilitation as a group of activities in an ECEC environment (Sphere 4, the ECEC environment), with the child being simply exposed to language rather than actively participating in its production. Theoretically, all the ECEC environmental means assigned to Sphere 4 can include reciprocal meaningful involvement of the child in language acquisition and its learning outcomes, for example, through the use of special child-related themes or vocabularies. However, it is important to involve young children in the on-going action and observe whether it captures the child's attention or matches the child's interests.

Furthermore, it is essential that the child can understand the target of joint attention, which itself requires a mastery of receptive language and reciprocal communication (see, e.g., Adamson et al., 2004; Watt et al., 2006). Thus, the factors determining the achievement of these objectives include the educator's understanding of language facilitation within a spectrum of linguistic multimodalities and taking actions that have a positive impact on a child's learning.

Some educators emphasized the importance of staff resources (Sphere 5, framework and co-operation) as prerequisite of early language facilitation in ECEC. They stressed the importance not only of the educators' understanding but also of the possibility of implementing language facilitation in ECEC on a daily basis and then extending it to the child's home. Clearly, investing in ECEC's resources can prevent difficulties early on and hence reduce the need for later remediation.

Educators' Background as a Possible Way to Benefit the Infant-Toddler Group in ECEC

The second research question investigated the relationship between the educators' professional backgrounds and their responses on how best to facilitate early language development. The findings showed that on the whole the ECEC special education teachers understood the importance of child-led reciprocity. It is likely that these special education teachers had various qualifications in addition to their basic degree that possibly contributed to explaining the differences in the responses of this group compared to those of the other educator groups. It should also be noted that ECEC special education teachers receive training in a wide range of topics related to child development, of which language development is only one component. Within the ECEC work community, familiarizing oneself with the topic depends on the resources available; this may be another explanation leading to individual differences in educators' competence. ECEC special education teachers also differ from the other ECEC educators in their work duties. Instead of being responsible for a specific group of children, ECEC special education teachers observe daily situations and interactions from the viewpoint of individual children. They have more opportunities to notice how language facilitation occurs in ECEC and thus experience of its impact on child language learning. Therefore, based on the findings of the present study, involving these professionals in ECEC teams would be critical step forward in more efficiently facilitating early language development.

In addition to the ECEC special education teachers, the responses of the educators with experience of working with infant-toddler groups in ECEC educator-child communication as the means of language facilitation were expressed more generally (Sphere 2, general language facilitation). The results indicate that although the experience of working with infant-toddler groups in ECEC does not alone support educators' understanding of language facilitation practices in detail (Sphere 1, child-led reciprocal linguistic communication), it helps educators to orient themselves to their content. Thus, having experience in these groups has the potential to increase an educator's competence in facilitating early language learning.

It should be noted that experience in functional language facilitation can also be gained through teamwork with other ECEC professionals. In diverse teams, the success of early language facilitation is easily dependent on the capacity (e.g., experience, education, and personality) of the personnel involved as well as on other resources available to the ECEC professional team that may also partially define the competence of special education teachers. However, the purpose and best practices of early language facilitation should be basic knowledge that is available to all ECEC educators. To increase educators' understanding and assist them in their tasks, systematic multi-professional co-operation is needed.

Limitations

This study has its limitations. First, in a survey-based study, it is not possible to refine responses by asking clarifying questions. Replying in writing to an open-ended survey question likely reflects personal preferences regarding response length. The question put to the educators referred to a child's individual ECEC plan. Responding to this may reflect individual or unit-specific practices of documenting these plans. Gathering the data through an interview would have allowed for more specific questions to be asked and could have yielded richer and more diverse content. Even if they reflected educators' understanding and implementation of early language facilitation, their survey responses may differ from what actually happens in practice. Educators may also have unconsciously been effectively facilitating children's language development even if they were unable to report how they did this in a way that met the criteria for inclusion in Sphere 1 (see Os, 2019). Videotaping ECEC episodes could more precisely have captured the real language facilitation actions of educators, especially of those who did not explicitly mention practices of child-led reciprocal linguistic communication in their responses. However, the value of using survey data in this study, even taking into account the limitations linked to self-reports, was that it enabled the participation of a large number of educators from ECEC centers across the country. Moreover, the respondents had sufficient time and possibility to choose

a suitable time to respond to the survey and reflect on their work.

Second, the study was conducted in Finland, a context with its own cultural characteristics. For example, the Finnish ECEC is regulated by law (Finlex, 2018) to guarantee the same quality of services nationwide. The Finnish ECEC is also supported by policies and curricula that emphasize children's individuality and the importance of lifelong learning. Hence, the present findings may be particularly relevant for countries with similar ECEC policies, including a child-centered approach and the qualifications required of educators.

Clinical Implications and Future Research

The main clinical implication of the present findings is that educators need more knowledge about the facilitation and appropriate content of early language development and its importance in ECEC. This large–scale study showed that educators' understanding of early language facilitation practices is currently unfocused and unintegrated. Providing knowledge through education, written materials, or direct guidance to create the best possible circumstances for early language facilitation in the ECEC context is crucial (see also Degotardi & Gill, 2019). It would be beneficial to put early language facilitation in a more central position in training programs for ECEC teachers and other ECEC staff.

In Finland, while the core curriculum (OPH, 2022) of ECEC mentions reacting to children's communicative initiations as important in the practical work of ECEC educator teams, it is not explicitly related to early language facilitation and offers no concrete practices (such as those in Sphere 1 in this study) for facilitating early language development. Although specific characteristics of language facilitation in different age groups are not specified (Rutanen & Hännikäinen, 2019), high-quality ECEC nevertheless requires educators to translate documentary information into concrete daily activities and practices to secure optimal language development for each child. This imposes a high demand on educators. Thus, early language facilitation in ECEC should be supported by reforming the core curriculum or other similar country-specific information sources with including more relevant content concerning early language facilitation.

Future ECEC research on early language facilitation could be furthered in two ways. First, reflective video assessment could be used in ECEC intervention studies (see Romano & Schnurr, 2022) and also as a practical method to increase the quality of early language facilitation in ECEC. Second, in relation to ECEC resources (Sphere 5, framework and co-operation), the possibility of educator-child situations in ECEC settings that facilitate language learning should be examined, especially for children whose initiatives are not easily noticed (Hu et al., 2019; Nyland, 2009).

ECEC has the potential to provide early language facilitation that can reduce the differences between children in their language learning environments outside the ECEC center. Every child should have the right to quality language facilitation to make the most of their future learning opportunities and cope with societal demands. Thus, increasing educators' preparedness for supporting early language facilitation, investing in ECEC special education teachers, and prioritizing language learning from an early age would increase children's prospects for successful life-long learning.

Declarations

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