Scaffolding Patterns of Dialogic Exchange in Toddler Classrooms

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Abstract

The present study investigates how often episodes of dialogic exchange can be identified in educator–toddler interactions during play and emerging academic activities, what kind of scaffolding strategies educators use during the episodes of dialogic exchange and, ultimately, what kind of scaffolding patterns of dialogic exchange can be identified based on educators' use of scaffolding strategies. Educator–child interactions were video-recorded in seven European countries, in two toddler classrooms in each country. The video recordings of emerging academic and play activities were transcribed and analysed, combining the principles of theory and a data-driven content analysis. First, 69 episodes of dialogic exchange were identified. Second, the episodes were analysed with respect to the educators' use of scaffolding strategies and then divided into three scaffolding patterns of dialogic exchange that were characterised by 1) scaffolding action; 2) scaffolding thought process; and 3) scaffolding educational dialogue. Although the episodes of dialogic exchange were identified relatively seldom, they indicated the educators' competence to scaffold toddlers for different purposes through dialogue. The results unravel the potential of dialogic exchange with very young children and provide concrete examples of effective scaffolding strategies beneficial to both educators within pre- and in-service training.

Keywords: Dialogic exchange; Scaffolding; Educator–child interaction; Toddlers

1. Introduction

In Europe, around one-third (34.2%) of children under the age of three attend centre-based early childhood education and care (ECEC), and the number has rapidly increased as children turn three (European Commission/EACEA/Eurydice/Eurostat, 2019). Toddlers (herein referred to as children in their second and third years of life) are in a developmental phase encompassed by rapid social and cognitive development. Particularly, advancements in language are eminent: toddlers acquire new words at an increasing rate, show rising interest in asking questions and learn to require and provide explanations (Baldwin & Meyer, 2009). At the same time, toddlers start to master the spoken language at the level of reciprocal exchange, enabling more collaborative, balanced and dialogic exchange with other children and adults (Degotardi, 2017: Tomasello et al., 2005).

Educators in ECEC play an important role in engaging children in meaningful interactions and facilitating children's increasing linguistic and communicative competence and natural curiosity. These educator–child interactions are herein referred to as *dialogic exchanges,* which are characterised by extended verbal sharing between the educator and children, during which the educator and children ask questions, listen to each other and share their points of view, all of which is done to build a joint understanding (Alexander, 2008). By engaging in dialogic exchange, children not only learn how to collaboratively engage and progress in communicating (Degotardi, 2017; Kumpulainen & Lipponen, 2010), but they also receive the educators' support for steering thinking and understanding (van der Veen et al., 2015), ultimately contributing to the development of children's meaning making and deeper learning (e.g., Howe & Abedin, 2013; van der Veen et al., 2015). What limits this research field is that a large proportion of the research on dialogic exchange has been conducted in the context of preprimary, primary and secondary education. Therefore, theorising on dialogic exchanges has been strongly influenced by information derived from older children's classrooms, along with the principles and methods of preprimary and school contexts (e.g., Howe & Abedin, 2013). As a result, there is a lack of adequate knowledge not only on how to

operationalise dialogic exchange among two- to three-year-old children in classrooms, but also of the prevalence of dialogic exchange in toddler classrooms in ECEC.

The studies among children in preprimary and primary classrooms have shown that educators' effortful use of *scaffolding strategies* that promote learning and developmental processes, along with an acknowledgement of individual and contextual demands, are particularly key in steering and maximising the power of dialogic exchange (e.g., Alexander, 2018; Muhonen et al., 2016; Rojas-Drummond et al., 2013). For children up to four years of age, studies have well documented the importance of the use of questions (Siraj & Manni, 2008), language and communication support (e.g., Durden & Dangel, 2008; Goble & Pianta, 2017) and establishing episodes of joint attention (e.g., Degotardi, 2017) in creating fruitful opportunities for engaging in dialogic exchange. However, these studies simultaneously emphasise that educators may not fully acknowledge the potential of persistently scaffolding interactions with young children (Curenton & Granada, 2019; Torr & Pham, 2016) in an effort to steer their language, learning and joint understanding.

Studies have further shown that the affordances for dialogic exchange vary according to the type of activity, suggesting that educators may use language and scaffolding in a more effective manner throughout some activities in daily ECEC practice (e.g., Degotardi et al., 2018; Gmitrová & Gmitrov, 2003; Slot et al., 2016). Hence, the affordances for dialogic exchange are shaped not only by the contextual or situational preconditions, but also by the educators' scaffolding strategies. Studies that aim to understand this type of underlying regularities, similarities and commonalities (*patterns*) across classrooms in ways in which educators maintain and enhance dialogic exchange together with the children are few (e.g., Muhonen et al., 2016). This stream of research is particularly warranted in toddler samples to better understand how and under what circumstances educators can best facilitate children's curiosity, use of language and communication during dialogic exchange.

The present study aims to contribute to the discussion on the prevalence of dialogic exchange among educators and children in toddler classrooms by investigating how often episodes of dialogic exchange can be identified during two typical daily activities (i.e., play and emerging academic activities). Particularly, we aim to understand the ways in which educators can support dialogic exchange with young children by exploring in detail what kind of scaffolding strategies educators use during episodes of dialogic exchange and what kind of broader scaffolding patterns of dialogic exchange can be identified based on the educators' use of scaffolding strategies.

1.1. Dialogic exchange in toddler classrooms

The present study identifies itself in the broad field of socio-culturally oriented (Vygotsky, 1978) studies, where the significance of language and communication for learning has been emphasised (e.g., Fernández et al., 2001; Kultti & Pramling, 2015). In the educational classroom context, instruction, teaching and learning can be improved through the effective use of language and communication in educator–child interactions, enabling the educator and children to move their thinking forward together and extending the possibilities for shared meaning making and deeper learning (e.g., Alexander, 2006; Hennessy et al., 2016; Lefstein, 2010). In the current study, the key concept of *dialogic exchange* is used to refer to extended verbal sharing, during which the educator and children ask questions, listen to each other and share their points of view, all in an attempt to build a joint understanding (Alexander, 2008). During a dialogic exchange, the interaction between educators and children is characterised by 1) collectiveness (the learning goal is being addressed together by the educator and children); 2) reciprocity (the educator and children listen to each other, share ideas and consider alternative perspectives); 3) supportiveness (the children can freely express and initiate their ideas in a safe atmosphere); 4) cumulativeness (ideas are being built together by educators and children and are linked to coherent lines of thinking); and 5) purposefulness (educators steer the talk with educational goals in mind) (Alexander, 2006). Dialogic exchange has also been shown to be critical (the educator and children identify and investigate points and explore questions

inside the group) and meaningful (educators and children relate to the topic and bring their own horizons to the discussion) (Lefstein, 2010).

The current study takes place in the context of ECEC, where the 'educational' function rarely takes the shape of formal instruction and teaching; rather, opportunities for collaborative learning can be created across different daily activities with the aid of insightful pedagogy (e.g., Kultti & Pramling, 2015). Furthermore, the developing language and communication competences of toddlers may have consequences on the breadth and depth of dialogic exchange (see also Muhonen et al., 2016): indeed, the talk itself is often characterised as talk for everyday life instead of academic talk (Alexander, 2010). The mechanism through which engaging in dialogic exchange begins with toddlers is largely based on creating moments of joint attention between the educators and children (Degotradi, 2017). While children and adults establish shared intentions or goals towards a socially significant object or event, they consequently tune into jointly sharing experiences and persuading intentions to each other (Degotardi, 2017; Tomasello, 1999). In addition to verbal utterances, nonverbal interaction and concrete objects can serve as a shared focus of attention that attaches children to the dialogic exchange. For example, extended gazes, bodily expressions (e.g., touching or gesturing) and offering or receiving objects, both by the educators and children can serve as avenues for sharing experiences and persuading intentions to each other. Educators' awareness and sensitivity towards children's initiations and the different kinds of motivations involved in these communicative acts (Biringen et al., 2012; Degotardi, 2017), along with putting these acts into words, can open a common communicative ground that, in turn, makes it possible for the interaction to evolve into dialogic exchange (Degotardi, 2017; White & Redder, 2015).

Some studies exploring dialogic exchanges within the classrooms in the context of ECEC and early primary education (Rasku-Puttonen et al., 2012; Muhonen et al., 2016) have identified interesting similarities and commonalities (herein referred to as *patterns*) that exist across classrooms in the ways in which educators maintain and enhance dialogic exchanges together with

the children; this is often shaped by contextual or situational affordances for dialogic exchange. For instance, Rasku-Puttonen et al. (2012) identified three patterns in the context of preprimary education in Finland, here representing the means by which teachers fostered dialogic exchanges across the classrooms: the patterns indicated that at the simplest level (pattern A), the teachers provided children with opportunities to participate and demonstrate their competence via question–answer sequences (initiation-response-feedback (IRF) pattern; Sinclair & Coulthard, 1975), whereas more intentional interaction embraced children's participation and diverse contributions (pattern B), further initiating space and support for child-initiated ideas (pattern C). Further, a study in Finnish preprimary and early primary classrooms (Muhonen et al., 2016) identified episodes of dialogic exchange that fell into broader child-initiated and teacher-initiated patterns that were based on the different combinations of teacher scaffolding strategies.

1.2. Scaffolding strategies support learning and joint understanding during dialogic exchange

The concept of scaffolding has been derived from the broad array of socio-culturally oriented studies where the *forms of adaptive support* provided to learners have commonly been referred to as *scaffolding* (e.g., Hardy et al., 2019; Mercer & Littleton, 2007; Van de Pol et al., 2019). In the current study, we use the concept *scaffolding strategies* (e.g., Rogoff, 2008) while referring to the concrete ways in which educators support children's language, learning and joint understanding during dialogic exchanges, including questioning, responding attentively to children's initiations, challenging them to think further, modelling through language, providing feedback, connecting separate lines of thinking (generalising) or associating children's prior experiences with the topic at hand (elaborating), making summaries and extending children's answers (e.g., Degotardi et al., 2018; Gillies, 2016; Muhonen et al., 2016; Rasku-Puttonen et al., 2012). Scaffolding strategies aim to steer classroom interactions towards a more equal and balanced exchange between educators and children, with the deliberate goal of shared meaning making being embedded within the practices (e.g., Littleton & Howe, 2010). Therefore, the effective use of scaffolding strategies makes children's

participation in dialogic exchanges more likely, aiding them in reaching a higher level of independent thinking and contributing to shared meaning making (e.g., Mercer & Littleton, 2007; Sedova et al., 2014). Prior studies in primary school classrooms (e.g., Gillies 2016) have shown that the skilful use of scaffolding strategies can increase the duration and depth of dialogic exchange and, by doing so, provide support for the development of children's participation and create a deeper understanding of the explored topic.

Although the important role of questions as a scaffolding strategy has been largely acknowledged, research reporting the use of questions both in preschool and infant/toddler classrooms has indicated that questions are nevertheless used in a relatively perfunctory way. For example, two studies have indicated that most questions asked of children were closed ended, and this tends to be the case for both preschoolers and toddlers (de Rivera et al., 2015; Siraj & Manni, 2008). Furthermore, despite the fact that 5.5% of the questions in the study by Siraj and Manni (2008) were open ended and intended to increasingly encourage children to talk, share and speculate, the questions did not always attract the expected responses in the child. Hence, even seemingly participatory interactions can remain under educators' control (Huang et al., 2019). A study by Degotardi et al. (2018) showed that educators typically engaged toddlers in discussions by asking, specifying or confirming (close-ended) questions, whereas explanation seeking (open-ended) questions were used less frequently; however, they noted that although both specifying and confirming questions are usually considered closed ended among preschoolers, with toddlers, these questions serve a broader purpose: confirming questions can enable the educators to seek and confirm children's perceptions and understandings (Hasan, 1989), and specifying questions can provide the child with a way to show his/her understanding, for instance, through naming or labelling (Degotardi et al., 2018). De Rivera et al. (2015) further showed that both preschoolers and toddlers had equivalent success rates in responding to questions that continue the ongoing topic, implying that

questions that are responsive to children's shared focus of attention might elicit more complex answers because their interest and motivation to reply is enhanced (de Rivera et al., 2015).

Finally, language-modelling strategies, such as repeating, labelling, extending or parallel talk, might be of relevance for building up a sustained dialogic exchange with young children. For instance, Girolametto and Weizman (2002) compared the use of language-modelling strategies in the classrooms of two- and three-year-old children, finding that educators expanded and reframed children's words into broader and advanced utterances in both age groups. However, educators clearly used more labelling with the two-year-olds and more extended children's answers with the three-year-olds.

1.3. Dialogic exchange in different types of activities

Dialogic exchanges between educators and children occur during different types of activities in ECEC, and different activities can provide vital opportunities for supporting children's language development (Dickinson, 2006). However, because studies have shown that the quality of educator–child educational interactions varies between the type of activities (e.g., Guedes et al., 2020), educators' responsiveness to and intensity of supporting children's verbal exchange and engagement may also provide varying possibilities for dialogic exchange to emerge from one type of activity to another. Prior studies have emphasised the superiority of educator-directed 'academic' activities over more free activities, such as play, in supporting and enhancing children's language development; for instance, prior studies have shown that educational dialogues (Slot et al., 2016), communicative events (Muhonen et al., in press) and educator–child reciprocity (Durden & Dangle, 2008) were more often identified during educator-guided activities with academic content.

However, studies have shown that more open and creative activities are also beneficial for children's deeper language and thinking skills. Goble and Pianta (2017) found that when educators engaged with children in free choice activities in a more effective manner (i.e., sensitive

and responsive facilitation along with timely verbal and cognitive support), these supportive interactions were positively related to children's language and literacy learning. The importance of educators' active verbal facilitation of learning was evidenced by Girolametto and Weizman (2002), who discovered that educators allowed for more initiations from the children by relying on children's nonverbal abilities, knowledge and experiences significantly more often in the context of a creative Play-Doh activity compared with an 'academic' book reading activity. Here, the educators also asked more questions during the Play-Doh activity than book reading, and these questions were more often clarifying and conversational by nature rather than focusing on testing understanding (Girolametto et al., 2000). In the context of play, Gmitrová and Gmitrov (2003) showed that joint attention between the educator and child, child leadership and acknowledging children's motivation to play are integral components for promoting cognitively challenging conversations during play.

2. The current study

The current study will look into the prevalence of dialogic exchange among educators and children in toddler classrooms by investigating how often episodes of dialogic exchange can be identified during two typical everyday activities in ECEC classrooms —namely play and emerging academic activities. Emerging academic activities (e.g., early literacy, numeracy or science-related activities during a group activity or circle time, whichever is more appropriate in the given country's context, see Slot et al., 2016) are of interest because previous research has mainly explored the dialogues within structured, educator-facilitated situations. In emerging academic activities educational goals are set for the situation and interactions (e.g., Degotardi et al., 2018; Mercer et al., 2009), and the reciprocity in adult–child interaction provides plentiful opportunities for using talk to inform learning (Durden & Dangel, 2008; Rasku-Puttonen et al., 2012). On the other hand, play activities are considered because play is strongly emphasised in the ECEC curricula across Europe (Sylva et al., 2015) and has been seen as central in supporting children's learning through educators' active engagement and responsive interactions with children (Gmitrová & Gmitrov, 2013). Play is often

less structured and is more often led or initiated by children; thus, play as a type of activity may allow educators to open new avenues for deeper learning via talk and responsive scaffolding (Degotardi et al., 2018). The current study particularly aims to contribute to the discussion on the ways in which educators can support dialogic exchange with young children. This is done by exploring what kind of scaffolding strategies educators use during the episodes of dialogic exchange, and further, by identifying what kind of scaffolding patterns of dialogic exchange can be identified, based on educators' use of scaffolding strategies. The following research questions were created:

1) How many episodes of dialogic exchange can be identified from educator–child interactions in toddler classrooms during play and emerging academic activities?
2) What kinds of scaffolding strategies do educators use during the episodes of dialogic exchange?
3) What kinds of scaffolding patterns of dialogic exchange can be identified based on educators' scaffolding strategies during episodes of dialogic exchange?

3. Method

3.1. Participants and procedure

The present study was a part of the EU-funded FP7 project 'Curriculum and Quality Analysis and Impact Review of ECEC' (CARE), which took place in the spring of 2015. The data used in the present study were collected in spring 2015 and pertain to one of the substudies in CARE, namely the multiple case study (Slot et al., 2016), which was conducted in seven European countries (England, Finland, Germany, Italy, the Netherlands, Poland and Portugal) in a total of 28 ECEC centres (two classrooms for new-born to three-year-olds [mainly serving two- to three-year-olds] and two classrooms per country for three- to six-year-olds). To ensure comparability across countries, these centres were selected using the predetermined and shared criteria on (a) age range, (b)

constituting of good practices, (c) structural characteristics, (d) SES of the families, (e) type of provision and (f) language background (see Slot et al., 2016).

Fourteen toddler classrooms participated in the present study. The children's age range varied to some extent in these classrooms because of different pedagogical reasoning behind constructing the groups in the various ECEC settings across Europe. However, a clear majority of the classrooms (93%) included two-year-old children and had mixed-age groups. Most classrooms included two- to three-year-olds (57%). There were from eight to 36 children (M = 18.88) and from one to five adults (M = 3.14) in classrooms. Altogether, 40 educators (36 female; four male) working in these classrooms filled out a questionnaire and reported their background information. The educators' ages ranged from 19 to 52 years (M = 34.76 years). Thirteen percent of the participating staff members had a secondary vocational education; 59% had a higher vocational education; and 28% had a college/university degree. One educator did not report an educational background. Working experience ranged from one to 29 years (M = 9.59 years).

Active informed consent was used to obtain research agreement from the local authority, head of the centre, educators and parents whose children participated. The consent forms were prepared along the ethical guidelines provided by the EU (European Commission, 2013), adapting the consent forms at the national level to meet each country's national ethical and/or legal guidelines.

Video recordings were made in each toddler classroom (n = 14) in each of the participating seven countries to capture the following four activities in each classroom: play, routine, emerging academic and creative activities (for more details on selecting the activities, see Slot et al., 2016). This created a body of data of 56 video recordings, which were from 10 to 22 minutes in length. Video recordings took place on two separate days, usually in the morning hours (between 8 and 12), to capture all four activities in each classroom. In the CARE study, most of the time, the

intended activities (i.e., play, academics, creative and routine) only took place once during the two mornings. In the few cases where more than one video of the same activity was available, selection of the videos was based on the length of time of the educator's presence. In case the length was similar across videos, the first recorded video was selected. The video selection was discussed with the educators, as well as with the whole research team. The recordings were conducted by the national teams after discussing and agreeing with teachers which activities and situations to record based on their plans. For the present study, video recordings classified as 'emerging academic activities' and 'play' were selected because they can be seen to provide somewhat different opportunities for dialogic exchange to emerge (e.g., Degotardi et al., 2018; Gmitrová & Gmitrov, 2013). Therefore, the data sample for the current study (n = 28 video recordings) consists of 14 videos of play activities and 14 videos of emerging academic activities.

The mean length of the selected videos was 17.36 minutes. The number of children present in the video-recorded activity ranged from three to 18 and the number of adults from one to three. On average, 8.38 children and 1.6 adults were present. The video recordings were originally translated and subtitled into English by the national teams in each of the participating countries. To enable the analysis, all the video recordings (educator–child interactions) were further fully transcribed into text. The transcripts included all the verbal utterances made by the educator and children in as much detail as possible. In addition, while transcribing, the nonverbal gestures relevant to dialogic exchange were added to the transcripts to add to the understanding of what the activity 'looked like' (e.g., a child pointing a toy towards the educator and the educator verbally acknowledging the gesture and bringing it into the dialogue; an educator smiling; or a tone of voice that supported the child's engagement in shared exchange). Both transcripts from emerging academic and play activities were combined into the same data pool.

3.2. Data analysis

There were three main phases in the analysis of the transcripts from emerging academic and play activities: 1) identifying episodes of dialogic exchange; 2) analysing the scaffolding strategies used by the educators during the identified episodes of dialogic exchange; and 3) dividing the identified episodes of dialogic exchange into data-driven patterns based on the focus of the educator's scaffolding during the episode. In all main phases of the analysis, researcher triangulation was applied within the research team (first and second author of the present study) to discuss the interpretations, re-examine the findings and reach a consensus (Cohen et al., 2007). The research team acknowledged ambiguities within the findings and discussed them.

3.2.1. Identifying episodes of dialogic exchange

As the first step of the analysis, the transcripts were read through several times to identify the episodes of dialogic exchange. The top-down, theory-driven content analysis (e.g., Graneheim & Lundman, 2004; Patton, 2002) was guided by Alexander's (2006) principles of dialogic exchange, which were then used as criteria for identifying the episodes of dialogic exchange. The identified episodes showcased at least three of the principles through qualitative, verbal and/or nonverbal manifestations. The presence of manifestations under each three principle (i.e., reciprocity, purposefulness and collectiveness) were required for the episode to be coded as a dialogic exchange. *Reciprocity* was manifested in the expressions that demonstrated educators and children listening to each other, sharing ideas and considering alternative viewpoints. *Purposefulness* was manifested in educators steering classroom talk with a specific focus or goals in mind. *Collectiveness* was manifested in educators and children addressing learning tasks together as a small group or as a classroom. The remaining principles of *supportiveness* and *cumulativeness* (Alexander, 2006) were more challenging to analyse within the interactions of these young children (two- to three-years-old). Direct evidence of supportiveness (children felt safe and supported by their educator and peers) could not always be identified because often, children's verbal participation was relatively little compared with the educators'. The small amount of participation could be because of the children's

language skills rather than feeling discouraged or unsafe. Likewise, the cumulativeness of the discussion was often challenging to identify because of the children's limited participation and educators' extensive support for the dialogue, but also because of the data being constructed through the separate sequences of interactions. Therefore, these two principles of supportiveness and cumulativeness were not considered as inclusion criteria for dialogic exchanges, despite the fact that the manifestations could sometimes be detected in the interaction.

The analytical process also included following decisions regarding determining the boundaries for the episode of dialogic exchange: if the topic of the discussion or activity changed, an episode ended. Also, if the learning topic continued but the reciprocal interaction between the educator and children faded and turned to emphasise the educator's instruction and one-sided talk, an episode was cut. The most typical form of educator–child interaction was the question–answer sequences (IRF) that comprised short (usually closed) questions and answers, during which the interaction between the educator and children was relatively superficial by nature and where the goal was not persistently maintained. These exchanges occurred in almost all the transcribed activities. However, based on the analytical criteria, these IRF pattern sequences were not counted as independent episodes of dialogic exchange but could be included as a part of extended episodes of dialogic exchange.

Finally, although the analysis process as a whole was based on the transcriptions of the video-recorded activities in toddler classrooms and emphasised verbal interaction, it is important to acknowledge the importance of simple, often nonverbal, interaction as a possible building block of dialogic exchange. For example, pointing out objects, mimicking playful gestures and providing simple utterances or single words are all natural ways of communicating, making initiations or answering questions. Such affordances were added as comments in parentheses during the transcription phase and taken into account as behavioural markers while defining the boundaries for

the episodes of dialogic exchange (e.g., child lifting a doll's hat and pointing it at the educator) when they led to relevant verbal acknowledgement by the educator.

3.2.2. Analysing educators' scaffolding strategies

As the second phase of the analysis, the identified episodes of dialogic exchange were further analysed to identify the specific scaffolding strategies used by the educators during dialogic exchanges. A unit of analysis was defined as a word, utterance, sentence or even several sentences, as long as the function of the strategy used was clearly identifiable. One unit could also be coded as having several overlapping functions (not considered to be mutually exclusive). No predetermined coding scheme (e.g. Hennessy et al., 2016: Kumpulainen & Wray, 2010) was applied, but the scaffolding strategies were determined using a bottom-up, data-driven approach. The data-driven scaffolding strategies consisted of different questions, responses, expansions, generalisations, argumentations, elaborations and forms of feedback. Special attention was paid to the different types of inquiries and questions posed by the educators, which were categorised based on the following dimensions that could overlap: open, closed, confirming, expanding, clarifying, specifying, experience-based, factual and view. During the analysis, special attention was paid to educators' comments, but the bidirectional relation to children's comments was also included. A data example of the data-driven analysis procedure is presented in detail in Table A1.

3.2.3. Grouping the episodes of dialogic exchange into patterns

In the final step of the analysis, the identified episodes of dialogic exchange were carefully reviewed again, and based on the educators' differentiated use of scaffolding strategies within each of them, the episodes were further grouped into three data-driven themes, herein referred to as scaffolding patterns. Scaffolding patterns illustrate a larger latent grouping of the data (see Graneheim & Lundman, 2004) that reveals the underlying regularities in educators' use of scaffolding strategies, which further steer the goal and focus of the dialogic exchange. Episodes in which educators'

scaffolding focused on supporting and maintaining children's actions and work processes through repeating children's answers or initiations and by asking several questions formed a *pattern of scaffolding action*. The second *pattern, the pattern of scaffolding thought process,* consisted of episodes of dialogic exchange where educators' scaffolding supported children's thought processes and shared understanding, for instance, through the use of open-ended questions or encouraging children to problem solve, closely linking this to the ongoing activity. Finally, the episodes where the educator scaffolded both the children's shared understanding and points of view (e.g., through explicitly summarising the ongoing discussion and by asking children to justify their ideas) and where the children participated actively in the discussion formed *a pattern of scaffolding educational dialogu*e. The descriptions of the identified three patterns are explained in detail in the results section with attached examples.

4. Results

4.1. Episodes of dialogic exchange across activity settings and scaffolding patterns

Altogether, 69 episodes of dialogic exchange were identified in toddler classrooms, of which 38 took place during play and 31 during emerging academic activities. These episodes further fell into three patterns based on the use of educators' scaffolding strategies, namely the patterns of *scaffolding action*, *scaffolding thought process,* and *scaffolding educational dialogue* (see Table 1).

Table 1 *Prevalence of the identified episodes of dialogic exchange and the three scaffolding patterns across the two types of activity*

Type of activity	Scaffolding patterns of dialogic exchange		
	Scaffolding action (%)	Scaffolding thought processes (%)	Scaffolding educational dialogue (%)
Play	22 (68.8)	16 (47.1)	0 (0)
Emerging academic activities	10 (31.2)	18 (52.9)	3 (100)
Total no of episodes by patterns	32 (100)	34 (100)	3 (100)

As shown in Table 1, episodes pertaining to the pattern of scaffolding action more often took place during play activities than educational/emerging academic activities, whereas episodes pertaining to the scaffolding thought process more often took place in emerging academic activities than in play. All the episodes pertaining to scaffolding educational dialogues took place during emerging academic activities.

Because each of the three patterns characterise similarities in the educators' use of scaffolding strategies, in what follows, each of the three identified patterns are presented as their own paragraphs. Examples of authentic episodes of dialogic exchange are used to verify the use of the prevailing scaffolding strategies in daily activities.

4.2. Pattern of scaffolding action

During the episodes of dialogic exchange pertaining to this pattern, educators' scaffolding was used to steer the ongoing activity (e.g., supporting and enriching play with blocks, dolls, familiarising with rules in a board game, etc.) rather than other predetermined educational goals, along with supporting and enabling children's participation in and within the ongoing activity. Educators typically scaffolded children's participation into the discussion by asking questions (mostly closed ended) related to the

activity, objects or children's own close, daily experiences with them. The children typically reacted to the educators' comments by performing an action (such as fetching a required animal or following a suggested procedure) and sometimes with verbal (yet subtle) expressions or initiations. Within the episodes of dialogic exchange, pertaining to the pattern of scaffolding action, the educators' scaffolding strategies with the children were further characterised by actively describing the activity through self- and parallel talk, as well as repeating and expanding on the children's comments. In what follows, two examples of episodes of dialogic exchange, pertaining to a pattern of scaffolding action are displayed.

Example 1 shows an episode of dialogic exchange taking place during free play. The educator was sitting among the group of 13 children (from 33 to 44 months of age) in a home play area, and the children approached her freely. The following episode took place while some children started to play with dolls, dressing them up and trying to wear the clothes themselves. Other children played nearby.

Example 1 Episode of dialogic exchange, pertaining to a pattern of scaffolding action—play activity

Educator:	**Then C9 may put the raincoat on and then you can put the shoes on. The shoes against the rain. Let's get the doll dressed.**
Child:	I have that. (pointing at the doll's shoe towards educator)
Educator:	**Does it fit you C13? Yes? Go on and try if it fits you.** (suggesting the child to fit the doll's shoe on the child's own foot)
Educator:	**First put the arms through.** (assisting the child who is putting on the raincoat for the doll)
Educator:	**C9, come. It is raining outside.** (Singing) **It's raining, it's raining, the pants are getting wet. So I have to put on my raincoat.**
Child 13:	Look! Look! (speaking to educator, showing how the doll's shoe fits)
Educator:	**Hey, you did fit it? But now you have only one. Where is the other shoe?**
Child 13:	I don't know.
Educator:	**You don't know? Look C9, C11 is going to help. Is that okay?**
Child 9:	Yes.
Educator:	**Yes? Okay. Put the arm through.** (showing how to put the raincoat on) **We are dressing the doll. And then we are going outside.**
Child 13:	Look! (speaking to educator)
Educator:	**Hey, do you fit that as well? Does it fit me to?** (tries to wear the doll's hat)
Child 9:	Yes, it fits you to.
Educator:	**Yes? Or is my head a little too big?**
Child 13:	Educator, here also shoes! (finds the missing shoe)
Educator:	**Hey, another one!**
Child 11:	Look!
Educator:	**Yes! And then close it with the Velcro. Can you see the Velcro?**
Child 2:	(unintelligible)
Educator:	**Yes, very good**.

Educator:	**Okay, now you can do the- What do you put on his head? A …?**
Child 9:	Hat.
Educator:	**Yes, a hat. And C5 can put on the rain boots.**
Child 11:	(unintelligible)
Educator:	**Yes, well seen. Let's put on the coat.**

As shown in Example 1, the educator and children focus on shared objects, namely the material of the doll play. The educator remains active towards the content and play actions of the children for extended periods and makes an effort to scaffold children's attention and action through language. First, the educator is actively listening and shows awareness and acknowledgement towards children's varying initiations. Educator was often observed confirming and extending children's initiations: 'Hey you did fit it! But now you have only one. Where is the other shoe?' Second, this educator asked a lot of questions (e.g., 'Can you see the Velcro?', 'What do you put on his head?'), and despite the questions being closed ended (confirming/specifying by nature) for most of the time, they nevertheless opened a space for shared intentions and invited children to participate, either through verbal utterance or play gestures (e.g., child pointing at the Velcro or responding, 'a hat'). Third, active scaffolding through talk was well observable in educators' suggestions regarding the ways to engage the children throughout the episode: 'Then C9 may put the raincoat on and then you can put the shoes on.' These affordances served as platforms and possibilities of maintaining the shared activity and extending its duration.

Example 2 shows an episode of dialogic exchange during an emerging academic activity. The educator and four children (aged 27 to 42 months) were playing a board game where the children would lift wooden shapes of different colours from a small bag by turns and place them on a board of matching colour and shape. Each child had a board of one colour in front of him/her, and the winner was the one who filled the board first.

Example 2 Episode of dialogic exchange pertaining to a pattern of scaffolding action—Educational/emerging academic activity

Educator:	**And C6 will take the next one.** (lifting the bag full of wooden shapes closer to the child)
Child 6:	A fish.
Educator:	**A fish, which colour is it?**
Child 3:	For C3! (Recognises that the piece belongs to her board, makes pointing gestures)

Educator:	**Does C6 know which colour is it?**
Educator:	**Wait.** (C3 is making gestures towards grabbing the piece that belongs to her board)
Child 12:	I can give it.
Educator:	**Will you give it to C3? C12 can help. C12 can help. Give it to C12 and C12 can hand it over to C3.** (C6 hands over the piece to C12 who passes it on to C3)
Educator:	**Good. Well done C6.** (smiling and speaking with soft tone)
Child 3:	Thank you.
Educator:	**Thank you** (surprised and happy tone of voice)**, C3 remembered to say thanks.**

In this example, the goal of dialogic exchange focuses on turn taking in the context of a simple board game. The educator is steering the game activity and emphasises turn taking with clear directions, guiding and reciprocal talk: 'And C6 will take the next one'. The educator scaffolds through repeating children's comments and extending these with confirmations (e.g., 'Thank you, C3 remembered to say thanks') or asking extending or factual questions (e.g., 'A fish, what colour is it?'), which aided children in playing the game. The educator's encouragement and positive affirmation (e.g., 'Good. Well done C6') supported children's participation. Finally, the children were observed responding and making initiations without educators deliberately asking them to do so (e.g., 'I can give it'), indicating that the children should follow the situation, each other's turns and feel welcome to present their ideas.

In Table 2, the educators' most commonly used scaffolding strategies during the episodes of dialogic exchange, pertaining to the pattern of scaffolding action are summarised, along with the typical responses and initiations from the children.

Table 2. *Scaffolding strategies and children's reactions – pattern of scaffolding action*

Educator scaffolding strategies	***Child reactions and initiations***
• Shows awareness towards children's varying levels of initiations (both verbal and nonverbal) and acknowledges them • Repeats children's answers and elaborates with additional information or questions • Asks lots of questions (closed ended, mainly confirming and/or specifying) • Uses encouragement and affirmation to create a safe environment for participation	• Shows willingness to participate with ongoing activity and acts along educators' suggestions • Answers educators' questions • Provides simple initiations both verbally and through gestures • Asks some questions

4.3. Pattern of scaffolding thought process

During the episodes of dialogic exchange, pertaining to the pattern of scaffolding thought process, educators' scaffolding strategies focused on encouraging children to problem solving. Educators

scaffolded children's engagement by asking numerous open-ended questions and making elaborations that allowed the children to participate in diverse ways. Scaffolding through questions and initiations was striving towards problem solving, and the educator's summarised information, made factual statements and described ongoing activity.

Example 3 introduces an episode taking place during a play activity. A small group of six children (aged 28 to 40 months) were building a tower with large Lego blocks. The educator was engaged in the children's activity, subtlety providing 'food for thought' while supporting the tower formation both physically and verbally.

Example 3 Episode of dialogic exchange pertaining to a pattern of scaffolding thought process—play activity

Educator:	**Look how big the tower already is! It's already bigger than C5 and taller than C7. Ohh!**
Child 2:	Another one, another one!
Educator:	**And it is even taller than C1. Another one?**

(child brings educator another block and points it at her)

Educator:	**Can you reach there? How do we do that then?**
Child 3:	I can reach it, can I do it (asking C2)?
Educator:	**Yes, the tower is also taller than you C2.**
Child 3:	I can reach it here.
Educator:	**So good! Shall I hold the tower, then?**
Children:	Yes.
Educator:	**Otherwise it will fall, I think.**

(children and educator exchange comments regarding the tower)

Child 2:	What do you want?
Educator:	**Well, I know what C7 wants. C7 wants to put the small green block on top, but he can't reach there anymore. How do we have to do that then?**
Child 3:	I don't know.
Child 5:	I can do that.
Educator:	**How can we become taller then? Oh, you just can get there?**
Child 3:	No I can't get there
Child 1:	Go stand on a chair; that is allowed.
Educator:	**What do you have to get, then? That you can stand on something?**
Child 1:	A chair, a chair!
Educator:	**Hey, C1 is looking for a chair. Good idea! Then I just hold the tower.**
Child 5:	And me too.

(Children are carrying small chairs closer to the tower of blocks)

The educator's comments are closely linked to supporting children's physical task of building the tower, but at the same time, she uses verbal cues to simultaneously scaffold children's thinking one step ahead. The educator, for instance, scaffolds the children to explore the qualities of the tower by

embedding comparative concepts—'The tower is already *bigger* than C5' or 'The tower is also *taller* than C4'—as well as solving problems in an appropriate stage (e.g., 'How do we have to do that then?', 'What do you have to get, then?'). The educator also led children towards understanding the causes and consequences with her elaboration: 'Shall I hold the tower, then? Yes. Otherwise, it will fall, I think'. The children's participation was further supported through the educator acknowledging and confirming their initiations and actions (e.g., 'So good!' and 'Good idea!'), which consequently created safe and welcoming space for all the children to join in.

In Example 4, a group of 10 children (aged 31 to 38 months) was engaged in playing shared memory games as an emerging academic activity. There is an assortment of small plastic animals on the floor that the children and educators were naming and observing carefully. The educator covered the animals with a scarf and removed one, and the children guessed which animal was missing.

Example 4 Episode of dialogic exchange pertaining to a pattern of scaffolding thought process—Emerging academic activity

Educator:	**No, no, you don't have to grab more, you have to see which animal is missing.**
Child 6:	Is the sheep missing?
Educator:	**No. The sheep is here.**
Educator:	**It is missing an animal that is very little, has wings, is always stinging the horses and the cows and makes a sound like bzz** (imitating a fly, makes fly sounds)**.**
Child 6:	The bee! The bee!
Educator:	**We don't have bees here.**
Educator:	**What other animal do we have here that is not a bee?**
Educator:	**They are black. What is it C9? Say it C9…**
Child 9:	The fly.
Educator:	**The fly!**
Educator:	**I didn't see the fly. Let me see if it´s here.** (Educator is opening the bundled scarf that is lying in her lap and seeks the missing animal from inside of it) --
Educator:	(makes fly sounds, smiling)
Child 6:	Fly!

As is typical of episodes pertaining to the pattern of the scaffolding thought process, this educator provided children with an opportunity to think further, solve problems and predict, even during a simple and repetitive action. The educator used the characteristics of a fly as hints to relate the missing animal to the children's daily experiences (e.g., it is an animal that is very little, has wings…). After a child provided a factual answer (i.e., the bee!), the educator responded (i.e., We don't have bees here),

but instead of providing the correct answer, the educator challenged children to think further with a closed question and expansion (i.e., what other animal do we have here? It is black.)

Table 3 summarizes the educators' most commonly used scaffolding strategies in the episodes of dialogic exchange, pertaining to the pattern of scaffolding thought process, and the ways in which the children responded and initiated. When compared with the episodes of dialogic exchange in the pattern of scaffolding action, in the current episodes the educators' scaffolding strategies built the children's ideas somewhat away from the concrete operations, allowing them to think more flexibly outside the direct observable content.

Table 3. *Scaffolding strategies and children's reactions – pattern of scaffolding thought processes*

Educator scaffolding strategies	***Child's reactions and initiations***
• Uses rich and descriptive vocabulary • Steers children's thoughts towards more abstract goals beyond, but related to, concrete activity and task at hands • Poses open-ended questions (what? and how?) • Invites children to predict and compare • Uses problem-solving questions such as 'How?' • Provides hints related to the children's experiences	• Listens actively • Engages eagerly to activity • Responds to educator verbally and through performing actions • Makes sophisticated guesses • Alters one's own actions • Produces remarks relevant to the questions posed

4.4. Pattern of scaffolding educational dialogue

All the episodes of dialogic exchange, pertaining to scaffolding educational dialogues took place during emerging academic activities. Educational dialogue was characterized by a clear preacademic content or goal relating to the ongoing activity, which was also verbally addressed. The educators engaged children to dialogic exchange by asking several open-ended questions that prompted problem-solving skills but above all scaffolded children's thinking further by systematically encouraging them to provide justifications, thus making the processes of thinking concrete. For instance, scaffolding strategy of asking for children's views was only observed in these episodes, pertaining to a pattern of dialogic exchange.

Example 5 introduces an episode representing the scaffolding pattern of educational dialogue that occurred among educators and five children (39 months old) while they were observing

snails in the ECEC setting's garden. Within this episode, the educators and children observed whether the snails were eating the fruits the children had brought with them.

Example 5 Patterns of scaffolding educational dialogue—Emerging academic activity

Child3:	I have to see what the snails do! They are going towards the apple.
Educator:	**Eh, let's see, maybe they smelled it.**
Child3:	It's eating?
Educator:	**Let's see… C2, what's wrong?**
Child2:	There's a caterpillar.
Educator:	**Where's the caterpillar?**
Child2:	It went away. Look (there's) another!
Educator:	**Wait, wait, and don't yell it may be going on the apple. Try to see.**
Child2:	Oh no! It's getting down.
Educator:	**Wait, let's see what it does.**
Child3:	It's going down.
Educator:	**You think it's going down?**
Child3:	Yes, look it's getting down!
Educator:	**Oh! So it is not hungry. I think C2 was right**.
Child3:	Why are they not behind the apple?
Educator:	**Eh, C3, that's a good question. In your opinion why isn't it eating our apple today?**
Child2:	Maybe it's not tasty!
Educator:	**You think it's not tasty? And so what can we give them to eat?**
Child2:	I don't know. Tomorrow we can give them a banana!
Educator:	**We can try a banana. Tomorrow we can try with a banana and see what happens… What do you think C3?**
Child3:	Three pieces cut small.
Child2:	Look it's eating!
Educator:	**Wait, C3 is speaking, wait C3 is speaking.**
Child3:	Not big pieces of banana, small ones.
Educator:	**Ah, we have to give them small ones? It's good you told me!**
Child3:	Because snails are small.
Educator:	**You're right. So they eat small pieces.**
Child2:	Look, it's eating!
Educator:	**Which one is eating?**
Child2:	That one!
Educator:	**This one, you're right! C2's right, it's on the apple! Look!** (pointing at the snail)

This example shows how the young children were engaged in a meaningful and lengthy discussion with the educator. What differentiates the episodes pertaining to scaffolding pattern of educational dialogue from the two other patterns, is the increased balance between the educators' and children's turn taking: the children make relevant questions and respond to the educator about the intended goal of the discussion for a substantial period. The episode, however, reveals that maintaining educational dialogue also requires an effortful use of scaffolding strategies; the educators deliberately focused on scaffolding verbal exchange with the children and persistently stayed alert to the children's initiations and support the engagement and stability of the dialogic exchange, for instance, with

subtle comments (e.g., Let's see) and by repeating children's comments or initiations (e.g., C: Tomorrow we can give them a banana! E: We can try a banana). The educator also extended children's initiations, comments and ideas by making summaries: for example, the child said that the banana needs to be cut into small pieces, and educator replied, 'You're right. So they eat small pieces.' The educator's summary introduced new concepts for the child by providing a hypothetical consequence of cutting the pieces smaller. Above all, this shows how the educator skilfully provided systematic structured support for the children in their thinking and expressing through scaffolding. The educator stated an extending open question: 'You think it's not tasty? And so what can we give them to eat?' This challenged the children to think about alternative solutions based on their prior experiences. The educator also used questions that were not only open ended and abstract, but also asked the child to present his/her point of view: '*In your opinion*, *why* isn't it eating our apple today?' and 'Tomorrow we can try with a banana and see what happens. *What do you think* C3?'

Table 4 compiles the educators' scaffolding strategies and children's responses in the episodes pertaining to the pattern of scaffolding educational dialogue; it further highlights the unique characteristic of scaffolding educational dialogue; strive toward the balance in verbal exchanges between educators and toddlers.

Table 4. *Scaffolding strategies and children's reactions – pattern of scaffolding educational dialogue*

Educator scaffolding strategies	***Child's reactions and initiations***
• Maintains conversational talk persistently • Steers children's actions and thinking with respect to predetermined educational goals • Poses open-ended questions • Makes summaries and pulls together lines of thinking • Invites children to explain their thinking by asking 'How?' • Asks children to present their points of view and asking for justifications by asking 'Why?' • Moving on the verge of children's linguistic potential	• Engages actively to verbal exchange • Responds to educator • Makes initiations related to the topic at hand • Makes sophisticated guesses or alters one's own actions • Produces remarks relevant to the questions posed • Explains • Presents own thoughts
• Equal participation in verbal exchange, turn taking and input into the discussion	

5. Discussion

The aim of the present study was to explore how prevalent episodes of dialogic exchange are among educators and children in toddler classrooms and how they emerge during two typical daily activities (i.e., play and emerging academic activities). Particularly, the current study sought to understand the ways in which educators support dialogic exchanges with toddlers by exploring what kind of scaffolding strategies educators used during the episodes of dialogic exchange and, based on these strategies, what kinds of broader scaffolding patterns of dialogic exchange could be created. The results suggest that episodes of dialogic exchange take place both during play and emerging academic activities, but episodes of dialogic exchange were identified relatively seldom. This finding is in line with prior studies using similar criteria across classrooms of different age groups (e.g., Muhonen et al., 2016). At the same time, our results indicate that there are broader similarities and regularities in the ways in which educators scaffold children for different purposes through dialogue. Consequently, three scaffolding patterns of dialogic exchange were identified: scaffolding action, scaffolding thought process and scaffolding educational dialogue.

Episodes of dialogic exchange pertaining to the pattern of scaffolding action were more than twice as often identified during play than emerging academic activities. The scaffolding strategies were clearly characterised by the use of several closed questions. However, instead of only building sequences of several closed questions, these educators used expansions and summaries along with closed questions to build on the children's responses before then utilising follow-up questions. By doing so, the educators created 'spiral' IRF sequences that further facilitated shared knowledge building (Rojas-Drummond et al., 2013), possibly through providing and verbalising clearly identifiable foci of shared attention for the educator and children (e.g., Degotardi, 2017). In line with the notions of de Rivera et al. (2015), questions tied to shared focus, object or interest can further add the motivation and interest to reply and participate, which is evidenced in the current study. Educators' skilful use of scaffolding strategies, particularly during episodes of dialogic

exchange in play situations, might relate to the general emphasis and appreciation placed on play as an activity in Europe (Sylva et al., 2015): it flows from children's interests, perspectives and ideas, and educators might more easily adapt to the role of a coplayer or facilitator (perhaps even pulling back from the leading role a bit). Therefore, the use of scaffolding strategies during play often take the form of facilitating the play onwards, as if the educator is asking the child, 'Is this the way you were thinking that the situation would evolve?' via coplaying and inviting children into the discussion. Thus, scaffolding also serves the purpose of searching for ways to make the play richer (Gmitrová & Gmitrov, 2003).

The episodes of dialogic exchange pertaining to the pattern of scaffolding thought processes were more prevalent during emerging academic activities than during play. Rather than scaffolding the action itself, educators used the ongoing activity and the available objects more explicitly as a tool to build knowledge with the children and add to the children's deeper understanding. When compared with the pattern of scaffolding action, the children in this pattern were engaged in the shared dialogic exchange somewhat more intensively and did so for longer. This reflects the educators' heightened situational awareness towards understanding the 'educational' nature of the activity and being better prepared to steer the activity towards a specific 'educational' goal (cf. Alexander, 2006). The educators understood and possibly had planned the activity beforehand, and because they could predict how it would proceed, they could scaffold the children beyond the concrete activity by using elaborations, comparisons and open-ended questions, guiding them towards problem solving. Goble and Pianta (2017) suggested that only educators' higher quality interactions with children in a free choice context (e.g., play) affected children's language and literacy skills improvement. The results of the current study are in line with these prior results, suggesting that deliberate, meaningful and active scaffolding might be more easily integrated into emerging academic activity because of being more predictable by nature; however, with careful and intentional scaffolding, educators can also enhance and maintain dialogic exchanges in the context of

play. The finding that the episodes of dialogic exchange pertaining to this pattern were also relatively prevalent during play (47.1 %) might also connect to the ambiguities in separating emerging academic activities and play in terms of 'educational' content. Sometimes, an intentional play situation can be more 'educational' than a poorly prepared emerging academic activity. Therefore, this result might relate to the fact that educators in ECEC in Europe, and in the current 'best practices' sample, are particularly well aware of the play pedagogy and they therefore also know how to scaffold thought processes through play. It is therefore important to note that the results indicate that both types of activities (i.e., emerging academic activity and play) can nearly equally enable dialogic sharing and joint knowledge building with young children (see Table 2).

Dialogic exchanges are critical for fostering deep learning and shared understanding among students of any age (Howe & Abedin, 2013). Along with prior studies (e.g., Muhonen et al., 2016), episodes where educators scaffolded educational dialogue took place very infrequently in our dataset. Despite the fact that the educators often acknowledged playing an important role in initiating and maintaining classroom interactions, educators rarely scaffold children's talk, engagement and attention in a way that dialogic exchange could evolve into educational dialogue (Webb et al., 2009). This was also the case in the current study: only three episodes of dialogic exchange were identified where educators could scaffold educational dialogue. However, looking beyond the mere frequency of these exchanges, these episodes showed that a dialogue between educators and young children can include highly sophisticated use of talk: only in the episodes within the pattern of scaffolding educational dialogue did all five principles of dialogic exchange (Alexander, 2006) emerge.

The reasons for finding only modest amounts of educational dialogue across classrooms continues to puzzle researchers (cf. Mercer et al., 2009; Muhonen et al., 2018). In the current study, first, the limited number of episodes partially relates to the children's developmental status: the children are only starting to learn to communicate with each other and the educator and are just becoming more aware of each other's perspectives and initiations. It is not self-evident for a

three-year-old to focus for an extended period, holding in mind the perspectives provided by others or being able to express a clear line of thinking. Therefore, educators' scaffolding seems to be crucial for an educational dialogue to emerge. Indeed, the educators showed great persistence in engaging in dialogic exchange; they did not rush onwards but persistently remained with the children's developing understanding, allowing them time to formulate their ideas and steering their focus towards the shared goal. Scaffolding strategies were used to narrow down the focus and inspect a topic more closely (e.g., asking for a reason, clarifying) and for creating a broader perspective and generalising (e.g., elaborating, asking for an experience). Scaffolding also focused more specifically on supporting children's developing ideas by asking questions that were meaningful for individual children (either through a child's opinion, perspective or experience). Consequently, scaffolding provided the children with possibilities to act as active agents of their own learning and follow their curiosity during dialogic exchanges (see also Sairanen et al., 2020). Studies have shown that it is easier for a child to engage in dialogue when the interaction is characterised by mutual contributions with educators (Degotardi, 2017) and when educators validate their role and perspective (de Rivera et al., 2015; McIntyre, 2007). This may be of particular importance in the current study because the children made more elaborate responses the more deliberately the educators invited them into a dialogue.

Second, the limited number of episodes of dialogic exchange in the pattern of scaffolding educational dialogues might also be a product of the fact that such dialogic exchanges with an educational focus are currently largely operationalised in school contexts, which tend to apply very different pedagogical principles than in many early childhood classrooms, especially those with children under three years of age. Consequently, the difficulty in identifying episodes of dialogic exchange with three, not to mention all five, elements of dialogic exchange, might be because toddlers and their educators operationalise these elements in a different way than teachers with older children. By applying the well-known and widely applied criteria (Alexander, 2006) for

identifying episodes of dialogic exchange and by complimenting them with the educators' use of scaffolding strategies, the current study mirrors its results against those from classrooms with much older students. Consequently, the current study further advances conceptualising and theorising about what constitutes dialogic exchange, and the support of thereof, in the classrooms of young children.

5.1. Implications

The current study extends the exploration of dialogic exchange to toddler classrooms. Toddlers are in a phase of practising sustaining attention and distributing their focus to several speakers, along with processing the content input and formulating their thoughts. Therefore, the role of educators in 'leading' and facilitating the dialogue by using timely, constructive and cognitively stimulating scaffolding strategies that feed children's curiosity and willingness to take part in dialogic exchange—along with a relatively limited number of children involved in dialogue (see Examples 1–5)—is particularly pronounced with toddlers. Prior studies have reported that it is necessary for children to learn the basic rules of dialogic exchange to build higher quality dialogues (e.g., Curenton & Granada, 2019). The current study's results imply that practising communication and building understanding through meaning making during precursory dialogues (where three out of five principles are fulfilled) provides ample opportunities for children to understand the principles of dialogic exchange (e.g., focusing on shared goals, expressing their thoughts, listening to others), but it also helps educators scaffold children's initiations, questions and ideas, making in-depth dialogic exchanges involving more children more likely to occur.

Although the principles of scaffolding might be known as a pedagogical process for educators across ECEC settings, the results of the current study emphasise that the scaffolding strategies remain relatively narrow: scaffolding a dialogic exchange is limited to the chained use of questions, whereas children are far less often asked to verbally elaborate their responses further or to

extend their reasoning. Consequently, the results have particular significance in the field of educator training and in professional development by increasing awareness of the potential to scaffold dialogic exchanges in toddler classrooms across different types of activities, for instance, by increased use of topic-continuing questions (de Rivera et al., 2015). By providing concrete examples of effective scaffolding strategies, educators can become better aware of the forms of dialogic exchange and recognise the daily situations beneficial for these forms to emerge. The results point towards utilising children's natural curiosity towards exploring their environment and using their varied forms of initiations as cues to further direct the goals of exchange and interaction within classrooms.

5.2. Limitations and future directions

The current study is not without its limitations. First, the data were originally collected in the CARE project to seek good practices in European ECEC through a case study design, and the selection of ECEC settings was based on choosing settings known to produce good pedagogy at the country level. Thus, it is likely that the pedagogy might be of a higher quality than average. Despite this possible selection bias, the number of identified episodes of dialogic exchange continued to be sparse. In line with studies with broader datasets, the current study's results seem to show the norm, at least when it comes to scaffolding dialogic exchanges.

Second, the full dataset for the CARE project included video recordings from four activities (i.e., play, emerging academics, creative and routine), whereas only two were selected for the current study because of their relevance when it comes to toddlers' experiences in ECEC. In future studies, it would be worth extending the investigation of dialogic exchange to other activities. Also, the division of daily activities into categories of emerging academic activity and play is not without its doubts, even though the division is based on a shared understanding among CARE researchers from each participating country (see Slot et al., 2016). For instance, play is considered

the most important learning context of young children (also referred to as emerging academic) in some countries, and emerging academic activity can take place during play rather implicitly. Therefore, the notions of patterns relating to play and emerging academic activities need to be inspected with this limitation in mind. Relatedly, although the data are rich culturally and linguistically in that they are derived from children from seven EU countries that speak several languages, addressing cultural and/or linguistic similarities and differences found across countries was not the goal of the current study. Therefore, we acknowledge that in the future, it would be highly important to carry out studies on dialogic exchange in a culturally diverse sample to better understand the myriad of contextual and cultural factors that play a role in affording dialogic exchanges with toddlers.

Third, the aim and accuracy of the transcripts limits the analysis of the role of nonverbal expressions in sustaining and scaffolding dialogic exchanges. Because the transcripts were mainly constructed with a specific focus on verbal utterances, the study cannot argue more broadly about the role of nonverbal expressions in scaffolding dialogic exchanges, even though some forms of nonverbal exchange were evident. It is important to extend studies among young children more systematically to include an analysis of nonverbal expressions (White & Redder, 2015).

Fourth, considering it is also rarely found in the classrooms of older children, one might argue that striving to identify dialogic exchanges with predetermined strict criteria in toddler classrooms is not feasible. However, most likely because of selecting the episodes using the same criteria as with older children, the results of the current study demonstrate interesting differences compared with patterns of dialogic exchange among older children and the vast dialogic potential that exists among young children. The current study found that the episodes of dialogic exchange fulfilled only three out of five criteria of dialogic teaching. In future studies, it would be feasible to build interventions among educators in ECEC and seek ways to increase both the number and quality of dialogues in toddler classrooms and to support educators' use of scaffolding strategies.

Finally, it must be noted that the children who were engaged in the dialogic exchange tended to represent the oldest toddlers in the classrooms. Three-year-olds (and slightly above) are also overrepresented in the examples provided in the current study. To be able to speak more generally of the role of young toddlers and infants and how to scaffold them in dialogic exchange, more detailed data sampling would be needed, and the transcription process should also be carefully attuned to nonverbal characteristics of interaction. This body of research has slowly started to emerge (White & Redder, 2015).

6. Conclusion

By emphasising the importance of different educators' scaffolding strategies and describing the concrete ways of enabling dialogic exchanges, the results contribute to the scant knowledge of dialogic exchange in toddler classrooms. The results suggest that dialogic exchanges can take place both during play and emerging academic activities although the episodes of dialogic exchange are not observed very frequently. At the same time, the purpose of a dialogic exchange and the type of scaffolding strategies may differ according to the activity type. Scaffolding children's actions, thought processes or educational dialogue seems to require different types of educator engagement. This means that future studies should shift towards more systematically examining how educators take advantage of the varied opportunities provided by contextual affordances and children's interests in different types of activities to scaffold dialogues with children. Our findings indicate that play and more structured emerging academic activities can provide good opportunities for dialogic exchanges to occur, hence building children's deeper thinking and communication skills through shared meaning making.

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Appendix A

Table A1. *An example of data-driven analysis procedure of scaffolding strategies.*

	Verbal and/or nonverbal utterance	Classified scaffolding strategy
Educator	Yeah, now we can hear a different type of chirp --- There is a magpie, but it does not sound—well how does the magpie sound?	*[factual question]*
Child	Hark hark (imitating the sound of a magpie)	*[reciprocal factual answer through gestures by the child]*
Educator	Yeah, the magpie croaks, you knew that alright. It doesn't go tweet tweet (imitating a great tit)	*[confirmation and expansion]*
Child	A great tit!	*[reciprocal factual answer by the child]*
Educator	Yes, it must be a great tit. The yellow one.	*[confirmation and expansion]*
Child	There is a great tit in my grandma's place.	*[reciprocal sharing of experience]*
Educator	Is there? There is a great tit in your grandma's place? Have you seen them in your home yard?	*[experience-based, expanding question]*