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Author(s): Muhonen, Heli; Verma, Priti; von Suchodoletz, Antje; Rasku-Puttonen, Helena

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Exploring Types of Educational Classroom Talk in Early Childhood Education Centres

[1 & 3] Heli Muhonen (heli.j.muhonen@jyu.fi)

[2] Priti Verma (pverma@hct.ac.ae)

[1] Antje von Suchodoletz (avs5@nyu.edu)

[3] Helena Rasku-Puttonen (helena.rasku-puttonen@jyu.fi)

[1] Department of Psychology, New York University Abu Dhabi, P.O. Box 129188, Abu Dhabi, United Arab Emirates

[2] Education Division, Higher Colleges of Technology, P.O. Box 7947, Sharjah, United Arab Emirates

[3] Department of Teacher Education, University of Jyväskylä, P.O. Box 35, 40014 Jyväskylä, Finland

Author Note: Correspondence concerning this article should be addressed to Heli Muhonen, Department of Teacher Education, University of Jyväskylä, P.O. Box 35, 40014 Jyväskylä, Finland. E-mail: heli.j.muhonen@jyu.fi, Phone: +358445508256

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Abstract

Educational classroom talk is beneficial for children's learning and communicative development (Alexander, 2018) but current research has predominantly focused on classroom talk starting from the primary school level. This study explored types of educational classroom talk between teacher and children as early as in early childhood education (ECE) in the United Arab Emirates (UAE). The study also examined how the occurrence of different types of classroom talk varies, depending on activities and content areas. Twenty-nine video-recorded and transcribed sessions from 11 ECE classrooms that comprised of three to four years old children were analysed, partly theory driven and partly data driven with respect to communicative acts, events and situations. Four types of educational classroom talk were identified: initiation–response–feedback (IRF), open naming, open informal discussion, and educational dialogue. IRF dominated the interactions across all content areas and activities. More extended types of classroom talk occurred predominantly in small-group activities. The study showed variation in educational classroom talk in ECE settings and suggests the need to increase classroom talk between teachers and children in the early stages of pre-primary education to support children's development and learning.

Keywords: educational classroom talk; early childhood education; activity; content area; United Arab Emirates.

Introduction

Previous research has suggested a positive association between early childhood education (ECE) classroom practices and children's learning and development (e.g. Burchinal, et al. 2002; Hännikäinen and Rasku-Puttonen 2010). The majority of this research has been conducted in kindergarten and early primary school, although in many countries, children's educational journey begins before kindergarten (years before children turn five or six), with educational activities and curricular learning goals being important components of ECE. Many children spend a considerable amount of time in ECE centres, where they engage in various forms of social and educational interactions. However, in the context of ECE these diverse forms of educational classroom talk and teachers' role in supporting them have been scarcely studied.

The vital role of talk and social interactions in children's learning and development was already acknowledged by Vygotsky (1987), and researchers have since then become increasingly interested in the nature and types of interactions that occur not only between parents and children but also between teachers and children in classrooms. Studies focusing on high-quality classroom interactions and related high-quality teaching practices (assessed, for example, with the Classroom Assessment Scoring System; Pianta, La Paro, and Hamre 2008) have shown them to promote students' learning motivation (Lerkkanen et al. 2012; Pakarinen et al. 2011), contribute to students' academic and social development (e.g. Cadima et al. 2016; Howes et al. 2008; Pakarinen et al. 2017) and the formation of positive peer relations (Peisner-Feinberg et al. 2001). However, variations in teachers' strategies for creating educational learning sessions and opportunities for classroom talk result in relatively unique educational experiences. Despite the important role that teachers play in initiating and maintaining classroom interactions, they rarely encourage children's talk and sustained classroom dialogues, for example, by asking them to explain and verbalize their

thinking and ask follow-up questions (Webb et al. 2009). In fact, classroom dialogue has been shown to take place infrequently in most classrooms, and instead of reciprocal and cumulative dialogues, classroom talk is dominated by the teacher (Howe and Abedin 2013; Myhill, Jones, and Wilson, 2016). As early as in kindergarten, the predominant interaction type follows a brief pattern in which the teacher asks a question, a child answers, and the teacher provides feedback regarding the correctness of the response; which has been labelled as the initiation–response–feedback (IRF) pattern (Rasku-Puttonen et al. 2012; Sinclair and Coulthard 1975). However, more extended educational classroom talk, such as educational dialogue, has been shown to support students' learning in diverse subjects (Alexander 2018; Howe et al. 2019; Muhonen et al. 2018). Therefore, extended educational classroom talk should be promoted as early as possible and attention should be paid to early educators' skills to scaffold classroom talk (Muhonen et al. 2016).

There are two research gaps in the literature that the present study aims to address. First, to date, research attention has predominantly been given to the various types of classroom talk in primary and secondary school settings (e.g. Alexander 2018; Howe et al. 2007; Mercer, Dawes, and Staarman 2009) and only few studies have mapped educational classroom dialogue occurring as early as in kindergarten (Huang, Yang, and Li 2019; Muhonen et al. 2019; Muhonen et al. 2016; Rasku-Puttonen et al. 2012). The scant research available on educational classroom talk in ECE before kindergarten entry has focused primarily on teachers' questions, especially with regard to infants (e.g. Degotardi, Torr, and Han 2018; White Peter, and Redder 2015). Yet, very little is known about educational classroom talk between teachers and young children before kindergarten. The present study aims to address this research gap by exploring what types of educational classroom talk can be identified as early as in ECE between teacher and children of 3-4 years old. The term "educational classroom talk" has been chosen to describe various types of interactions

occurring in ECE classrooms—namely short and segmented exchanges, as well as more elaborative and extended exchanges. In addition, the present study explores types of educational classroom talk across different types of learning activities (whole class or small group) and content areas (music, art/play, academic content, routine/lunch), since such different activities and content areas might place different demands on teachers how to create and sustain educational classroom talk.

Secondly, previous studies focusing on classroom interactions in general, and educational classroom talk in particular, have predominately been conducted in Western countries such as the USA, UK and Finland. A recent study explored teacher-child dialogue in Chinese kindergarten classrooms, presenting one of the first studies to expand this research to other educational contexts (Huang et al. 2019). Nevertheless, evidence remains scarce on how educational classroom talk unfolds in other (under-researched) populations. The present study aims to address this research gap by investigating educational classroom talk in ECE centres of the United Arab Emirates (UAE), one of the Gulf Cooperation Council (GCC) countries (which consist of the Arab states of the Persian Gulf), that has experienced a rapid increase in educational demands and expenses over the past few decades (Hvidt 2014).

Brief and Segmented Classroom Talk: Initiation–Response–Feedback Exchanges

Although classroom talk is a dynamic process that can vary from one moment to the next, studies have shown that classrooms are dominated by one particular segmented interaction type or script: the IRF exchange (Sinclair and Coulthard 1975). The teacher initiates this type of interaction by asking a question (which is often a closed question), to which a child (or children) respond(s). The teacher then provides feedback on the child(ren)'s answer(s). Even though an IRF

exchange can be considered an interaction between a teacher and his or her students, it has been claimed to maintain the traditional classroom power relationship, whereby predetermined knowledge is transmitted to the pupils by the teacher (Lemke 1990; Lyle 2008). In particular, the predominant use of closed questions minimizes the involvement of the majority of children in the classroom: If there is only one correct answer to the teacher's question, it is likely that only one child is allowed to provide it. Consequently, closed questions are likely to constrain children's contributions and foster passivity (Barnes 2008).

Nevertheless, IRF exchanges can take diverse forms and may have different functions. Loop IRF exchanges are composed of one IRF sequence, whereas spiral IRF exchanges are composed of two or more strings of IRF sequences in which the teacher's turns are adjusted to students' previous responses aiming to support their understanding (Rojas-Drummond et al. 2013). For example, instead of separate closed question-based sequences, the teacher can build on students' responses and utilize follow-up questions (Nassaji and Wells 2000). In fact, it has been suggested that IRF exchanges can play an important role in the teaching process (Rojas-Drummond and Mercer 2003). If structured effectively, they can successfully be utilized in the classroom to build a complex sequence of knowledge (Barnes 2008; Nassaji and Wells 2000) in which teacher questioning plays an important role. ECE teachers have been found to utilize primarily confirming (yes/no) and specifying (what, who, where, and when) questions to activate 2 years old children's participation and build knowledge, but they rarely ask more complex questions, such as those requiring explanations (why and how) (Degotardi et al. 2018), most likely due to children's young age. In fact, Rasku-Puttonen et al. (2012) suggested that teachers in the ECE context keep the level of questions intentionally low when utilizing IRF exchanges in order to increase children's participation, including those with more modest skills. However, more

complex questioning and scaffolding might be needed to support children in various levels of skills and to increase knowledge building and elaboration in classroom talk, even with very young children in ECE.

Extended Classroom Talk: Educational Dialogue

A vital aspect of educational classroom talk is the extent to which children are seen and treated as active participants in classroom discussions and the shared knowledge-building process (Alexander 2008). Interactions in which the teacher's main goal is to support students' thinking, understanding, and problem solving, rather than merely orchestrating classroom talk and giving them turns to answer short questions, represent a more "developed" classroom talk type (Myhill 2006; Wells and Arauz 2006). This type of classroom talk can be called educational dialogue, the quality of which has been shown to be positively linked with students' academic performance (Muhonen et al. 2018). Diverse definitions have been suggested and used in the literature to describe such reciprocal and extended educational classroom talk, including dialogic teaching (Alexander 2008), dialogic pedagogy (Skidmore and Murakami 2016), dialogic instruction (Nystrand, 1997), dialogic inquiry (Wells, 1999), exploratory talk (Barnes and Todd 1977; Mercer and Dawes 2008), and accountable talk (Wolf, Crosson, and Resnick 2006). In their paper, Howe et al. (2019) summarise some vital characteristics of educational dialogue that have been acknowledged and discussed in previous research: They suggest that in the dialogue participants should 1) utilize open questions; 2) make extended contributions, elaborations and build on previous knowledge; 3) acknowledge, probe and critique different opinions; 4) seek integrated lines of inquiry, and 5) adopt a metacognitive perspective on verbal interaction so that participants become aware of its value and reflect accordingly on their practice.

Though both teacher and students (or sometimes only students) are considered as equal participants of the dialogue and shared knowledge-building process, it is often the teacher who is responsible for orchestrating the cumulative discussion (Wells 2009), especially with young children. How the teacher scaffolds the shared knowledge-building process and children's active involvement has an impact on how the talk or dialogue will emerge in the classroom (Cazden 2001; Rojas-Drummond and Mercer 2003). The process of scaffolding is typically described as an interaction between teacher and children in which the former gradually transfers responsibility to the latter to increase and support their knowledge and abilities (Wood, Bruner, and Ross 1976). Nystrand (1997) highlighted the importance of child-centred scaffolding strategies for creating extended educational dialogue. These strategies include (a) posing authentic and concrete questions that students can relate to their experiences, (b) being open to students' questions and their initiatives to modify the learning content, and (c) linking students' responses to further elaborations and new questions. Previous studies in kindergarten classrooms serving 6-years-old children have found that the initiator (either the teacher or the child) and the teacher's scaffolding strategies have a significant impact on the quality and pattern of the dialogue (Muhonen et al. 2016; Rasku-Puttonen et al. 2012).

Educational Classroom Talk in Early Childhood Education

Young children's participation in educational classroom talk is linked to their language development and oral communicative competence (van der Veen et al. 2017). Herschensohn (2009) argued that children as young as three to four years old can be considered competent interaction partners whose growing vocabulary enables them to participate in complex discussions about diverse topics. During this developmental period, children ask numerous questions that may

already be abstract and complex. Consequently, in ECE, children's language and communication skills should be supported to encourage their natural curiosity and their eagerness to share their thoughts (Muhonen et al. 2016; van der Veen et al. 2017).

Nevertheless, limited research has been conducted on educational classroom talk in early childhood environments before kindergarten, even though there has been a systematic increase in the number of younger children enrolled in ECE worldwide (OECD, 2018). Studies have focused primarily on the quality of teachers' questioning (Bateman 2013; Degotardi et al. 2018; Houen et al. 2016a, 2016b; Walsh and Hodge 2016) and children's participation (Theobald and Kultti 2012). One study by Slot et al. (2016) assessed the quality of educational dialogue among three- to six-year-olds in classrooms in seven European countries: Finland, the Netherlands, Portugal, Poland, Italy, Germany, and the United Kingdom. They found that the amount of educational dialogue was scant and mainly occurred in activities focused on emerging academic skills. The type of activity, whether a small-group or large-group activity, made no difference with regard to the occurrence of educational dialogue. In addition the observed educational dialogue more often in science or math than in language/literacy activities. Using data collected in toddler classrooms (in which children were two to three years old) in the same seven European countries, Salminen, Muhonen, and Lerkkanen (2018) found that educational classroom talk was dominated by teachers who focused either on supporting children's understanding of the learning content or their performance on the activity. Importantly, few educational dialogues that included knowledge accumulation and reciprocal interactions between teacher and children were found. In addition, in Chinese kindergarten classrooms teacher-initiated dialogues and open-ended questions with known answer have been shown to dominate the interaction (Huang et al 2019).

Research with children at risk for or with evidence of developmental delays suggests that dialogic reading is a more common method of interaction in ECE (Towson et al. 2017). In dialogic reading, the teacher utilizes diverse question prompts to encourage children to verbally share their thoughts (Towson et al. 2017). Yet, more authentic (not based on interventions) research on the quality and types of educational classroom talk in the early years of children's educational journey is needed to develop ECE towards more conversational practices to support children's learning and communication skills.

Aims of the Study

The present study aims to explore diverse types of educational classroom talk in ECE, a context with very limited previous research on classroom talk. Prior literature from kindergarten, primary and secondary school contexts described classroom talk to be either brief and segmented (i.e. IRF-sequences) or more cumulative and extended exchanges (i.e. educational dialogue). In the present study, we are interested to find out whether these previously found types of educational classroom talk, in addition to other yet undiscovered types that may be specific to ECE, can be identified in ECE classrooms.

The data stems from ECE centres in the UAE. Recently, research has paid more attention to Arab countries to test the generalizability of Western education and child development findings (e.g. Abu-Hilal and Bahri 2000; Marsh et al. 2014; Muhonen et al. 2018). Findings from Western countries acknowledge the vital role of educational classroom talk for high-quality education and children's learning. However, besides the work of Muhonen et al. (2018), scarcely any evidence exists regarding the quality and types of educational classroom talk in Arab countries, especially in ECE settings. This study attempts to answer the following research questions:

1. What types of educational classroom talk between teacher and children can be identified in ECE centres in the UAE?

2. How does the occurrence of the different types of educational classroom talk vary depending on activities and content areas?

Method

Participants and Early Childhood Education in the UAE

In spring 2018, classrooms in 11 ECE centres were observed and video-recorded as pilot for a larger study focusing on ECE quality. These privately owned ECE centres are located in Ras al Khaimah, one of the seven emirates of the UAE. The majority of the ECE centres were stand-alone structures, located in residential areas, established during the past decade and owned and run by expatriates. ECE centres in the UAE provide care and education to children in the age range of 45 days to 4 years. The size of the ECE centres in the present sample ranged between 14 to 175 children per centre with a teacher:child ratio ranging between 1:8 to 1:15 for the 3-4-year age group. Some floating aides were available and mostly shared among several groups. There was large diversity in the curricula adopted in the ECE centres; many managers reported using adaptations of British, Early Years Foundation Stage (EYFS), American, Montessori, or German, UAE curricula, or a self-designed curriculum.

In total, 29 video recordings, ranging from one to four per ECE centre, were available for the present analysis, and the average length of each was 15 minutes (ranging from 4 to 38 minutes). The ECE centre's manager and at times teachers directed the researchers to do video-recordings in selected classrooms and selected times of the day when the children were engaged in everyday activities. The recordings covered 8 music sessions, 4 art/play sessions, 15 academic content

sessions and 2 routine/lunch sessions. Out of the 29 video-recorded sessions, 17 represented whole-group activities and 12 represented small-group activities. The average age of the 12 observed teachers was 34 years (ranging from 25 to 45 years). Their nationality varied: Five were Arab, four were British, one was Indian, and the information for one teacher was unavailable. All teachers were female and (with the exception of two for whom information was missing) holders of a bachelor's degree. Each group had an average of 14 children (ranging from 10 to 17 children) and catered to children who were three to four years old. While English was the predominant language of instruction, instruction was also given in Arabic in three ECE groups, thus reflecting the common pattern of language use in ECE in the UAE (Knowledge and Human Development Authority [KHDA], 2009). Teachers and children's parents gave their consent before participating in the study.

In the UAE, early child care programs are designed to provide developmentally appropriate activities that support the cognitive, social, emotional, and physical development for children up to the age of four years (National Child Care Standards 2009). The provision of programs should centre on the individual child, considering his or her specific needs and abilities (National Child Care Standards 2009). In 1983, the first national standards for ECE centres were implemented in the UAE (Federal Law No. 5 of 1983). Since then, the standards have undergone several revisions to ensure the quality of services and address the demand for care for children under the age of four, which has increased over the past decades. Eight objectives are emphasized in the national standards, the majority of which focus on structural aspects of the early child care setting, such as licensing and administration, building and equipment, child care organization (including caregiver credentials and caregiver–child ratio), safety and security, health care, and nutrition. Two additional objectives refer to processes occurring in the everyday interactions between caregivers

and children (i.e. quality of care and learning activities) and the partnership with parents (National Child Care Standards, 2009). The majority of ECE centres operates independent facilities and are private entities. Due to the specific demographics of the UAE (more than 80% of the country's population are expatriates), the majority of ECE centre users are non-UAE nationals (KHDA 2009).

Analysis

The overall aim of the analysis was to identify predominant patterns of educational classroom talk between teacher and children. The video recordings were transcribed and analysed in three levels starting from continuous strings of discussion turns. The hierarchical and nested levels of analysis (Hennessy et al. 2016; Hymes 1972; Saville-Troike 2003) can be utilized to study discourse between participants 1) at a micro level analysing communicative acts; 2) at a meso level analysing communicative events; or 3) at a macro level analysing communicative situations (Hennessy et al. 2016). In the present study, all three levels were utilized. First, the transcripts for each session were read through carefully to enable familiarization with the data. Attention was paid to the moment-by-moment nature of interactions in classroom talk (Littleton and Mercer 2010; Wells 1999).

On the first level of analysis, i.e. the micro level, the transcripts were analysed content driven in terms of communicative acts. A unit of analysis (communicative act) was defined as an utterance of one or several sentences or merely a single word, in which the act could clearly be identified (e.g. "What would be a healthy snack?" [inquiry], "An apple" [response], "You are right; apples are very healthy" [confirmation], "And they have lots of vitamins in them" [sharing information]). Communicative acts could consist of various types of initiatives (e.g. questioning,

sharing an experience or information), responses (e.g. answer, confirmation, and comment), evaluative feedback, argumentative comments, expansions, reflective comments, and summaries. Special attention was paid to teachers' inquiries and questions, which were analysed with respect to whether they were (a) open or closed and (b) clarifying or expanding (e.g. "What flower is this?" [closed], "Do you know any other types of flowers?" [open, expanding], "Oh, you have seen roses! What colour roses were they?" [closed, clarifying]).

Based on these communicative acts, the analysis continued to the second level, i.e. the meso level, to identify communicative events. Communicative events were defined by a series of turns between teacher and children in which participants, purpose, task, orientation and general topic remain constant (Hennessy et al. 2016). Changes in any of these aspects were coded as introducing a new communicative event. Interactions that did not contain exchanges between the teacher and children (e.g. the teacher lectured of talked to another adult) were not included as communicative events. After communicative events were identified, they were categorized based on the nature and structure of the interaction. This was done to analyse whether teacher–child exchanges contained only brief questions and knowledge sharing (IRF), extended and knowledge-building discussion (educational dialogue) or other types of classroom talk which included turn-taking between teacher and children.

The final level of analyses, i.e. the macro level, focused on analysing communicative situations in which the four types educational classroom talk occurred. The communicative situations were determined based on activity type (whole group activity or small group / centre activity) and content area (music, art/play, academic content, routine/lunch).

The first author was responsible of the coding. However, researcher triangulation within the research team was applied to discuss about the interpretations of the four identified and

carefully defined types of classroom talk. Occasional ambiguities were acknowledged, identified and discussed among the research group. Inquiry auditing between the first author (responsible coder) and the fourth author (senior researcher) was applied when needed.

Results

Types of Educational Classroom Talk

The first aim of the study was to explore types of educational classroom talk between teacher and children in ECE centres in the UAE (the analysis levels of micro and meso). Overall, classroom talk was dominated by the teacher. The teachers talked the most; asking questions, giving instructions, organizing classroom activities, and directing the interactions between them and the children. The vast majority of communicative acts between teachers and children were short and restricted to few exchanges. The partly theory driven and partly data driven categorization of the communicative events revealed four groups (types) of educational classroom talk: IRF, open naming, open informal discussion, and educational dialogue. The IRF and open-naming exchanges represented relatively short interactions between teachers and children. In contrast, open informal discussion and educational dialogue exchanges represented more prolonged and elaborative classroom talk and knowledge building. IRF was by far the most dominant type of classroom talk occurring in the data, with a total of 189 communicative events. The other three types of educational classroom talk occurred notably less often: 8 communicative events for open naming, 12 communicative events for open informal discussion and 13 communicative events for educational dialogue. In the following sections, more detailed descriptions of each type of educational classroom talk are presented.

IRF Exchanges

The predominant interactional exchange between teachers and children in the ECE classrooms was IRF. IRF sequences were brief, included closed or semi-closed questions, and were predominantly initiated by the teacher. For the most part, IRF exchanges were disconnected, including only one cycle of the question–answer–feedback sequence (*T: What is the name of this letter? C: It is K. T: The name of the letter is K, and it sounds ka ka*). However, there were a few instances in which several separate IRF sequences could be chained together (*T: What is this expression? C1: Surprise. T: What is this expression? C2: Smile. T: What is this expression? C3: Angry*). Teachers often repeated the same question to several children, expecting the very same answer (*T: Which colour are you holding? C1: Yellow. T: Very good! C2, which colour are you holding? C2: Yellow. T: Very good! C3, which colour are you holding? C3: Yellow*). Teachers rarely asked a follow-up question that was related to the first question but would have added another question–answer–feedback sequence (*T: What is that letter called? C1: Da. T: Da for? C1: Dofda. T: Good! Dofda!*). Despite the number of sequences, teachers predominantly asked questions that required specific one-word answers. At times, the feedback was not clearly verbalized, but the accuracy of the child's answer was approved by the teacher moving on to the next question (*T: What was there? Children: A frog. T: Where did the frog jump from? Children: From the plastic bag.*).

Open Naming

Similar to IRF, open naming represented relatively short interaction exchanges between teacher and children. In the present data, however, open naming occurred rarely. A typical open naming exchange was based on the teacher's question to which she allowed several children to

provide their answers. The question was open in the sense that there were several possible correct answers or views. Therefore, the concept was elaborated more broadly than in a typical IRF exchange with only one correct answer. However, similar to IRF, the answers often required merely one word or concept. Less frequently, the teacher would ask one or more additional questions to expand on the topic and the range of children's responses, especially when they had difficulties coming up with possible answers and alternatives.

Example 1. Extract of an open naming exchange

T:	Can you guys tell me something that begins with this letter?
C1:	C . . . C . . . cat.
T:	C for cat. What else?
C2:	A tiger . . . tiger.
T:	T for tiger. What begins with C? Cup . . . cakes. Everybody, let's say cake. What else? Is there any name in this class that begins with C?
C3:	Charlie.
T:	Charlie. Charlie, your name begins with this letter. The letter C.

Example 1 represents an open naming exchange in which the teacher provided questions to encourage the children to share their knowledge (*Can you guys tell me something that begins with this letter?, What begins with C?, What else? Is there any name in this class that begins with C?*) but also corrected misunderstandings (*T for tiger*). Children replied to questions with one-word answers (*cat, tiger,* and *Charlie*) which the teacher confirmed or corrected (*C for cat, T for tiger, Charlie,* and *your name begins with this letter*). The learning goal—that is, the letter C—could be clearly identified in this exchange.

Open Informal Discussion

The educational classroom talk type of open informal discussion represents more prolonged and elaborative exchanges between the teacher and children. Both, the teacher and children actively participated in and contributed to the discussion by asking and responding to questions and by sharing their thoughts. Although the topics were often related to children's everyday lives and experiences, clear educational and learning goal (either academic or more practical), instead of purely organizational and routine-oriented talk, could be identified. The teacher scaffolded children's participation by encouraging them to share their knowledge, providing acknowledgement, and being responsive to children's own initiatives. However, the teacher's scaffolding did not always include follow-up questions to broaden the content of the discussion. Therefore, the nature of the exchanges did not fully cumulate into a story upon which new knowledge could be built to enable the expansion of previous knowledge.

Example 2. Extract of an open informal discussion

	Context: Teacher and children are having lunch.
T:	What have you guys got for lunch? You have grapes. Who has an orange today?
C1:	Teacher.
T:	What have you got?
C1	Carrots.
T:	You've got carrots. Wow! Yummy!
C2:	Teacher.
T:	Yes.
C2:	What's that in it?
T:	That is . . . let me see. It is an apple and strawberry juice. It's good. It's OK.
C2:	Grapes also.

T:	It has grapes? Oh, it has grapes as well.
	Discussion at the lunch table continues.

Example 2 represents an open informal discussion that occurred during lunchtime. The teacher was interested in what the children had for lunch and asked them to name their food (*What have you guys got for lunch?*). In addition, one question was posed by a child (*What's that in it?*) who was asking the teacher to help name the fruits in the juice. With her feedback, the teacher indicated that children's lunch choices were good and healthy (*You've got carrots. Wow! Yummy! It's good. It's OK.*). An educational goal—that is, learning about fruits, vegetables, and food in general—could be identified in the discussion.

Educational Dialogue

In the educational dialogue exchange, both the teacher and children participated actively in the discussion and shared knowledge was built together. In other words, the teacher would not give correct answers nor ask separate questions, but questions would follow and guide the children and their thinking to enable achievement of the learning goal. The topic or learning goal was often concrete and closely related to children's everyday experiences. In addition to concrete discussion topics, teachers utilized other child-centred scaffolding practices, such as being open to children's own thoughts and initiatives and linking these thoughts to broader learning contents. However, the separate communicative acts and elaborations were relatively short.

Example 3. Extract of an educational dialogue

Context: Teacher and children are mixing colours.

T:	*Let's check. Let's see what happens ok. This one and this one you can see ok. And then tell me what you can see what happens?*
C6:	*I can see what happens.*
T:	*Tell me what happens.*
C6:	*What happens… Well some colour…*
T:	*The colours are mixing together?*
C6:	*Yeah.*
T:	*Woohoo! Blue mix with the red, red mix with the yellow. When red mix with the yellow it's become orange colour. Ok.*
C5:	*Orange?*
T:	*Yes and red mix with the blue it's become purple.*
C2:	*Black.*
C5:	*Well it's black.*
T:	*No I think it is purple, dark purple.*
C6:	*Light blue.*
T:	*The colour changes.*
C6:	*Look [C3's name]!*
C3:	*What will happen?*
	Exploring colours continue.

Example 3 represents an educational dialogue exchange in which the teacher aimed to elaborate and explore the concept of different colours and how they mix. The knowledge building process was initiated by the teacher to encourage the children to elaborate with an open question (*And then tell me what you can see what happens?*). Children had diverse options to tell what colours mix together and how. During the dialogue, children were allowed to also take their own initiatives and ask questions (*What will happen?*) even though the discussion was predominantly guided by the teacher's questions and statements. In her statements, the teacher confirmed or

corrected children's answers (*No I think it is purple, dark purple)* and shared new information *(When red mix with the yellow it's become orange colour).*

Differences in the Occurrence of Educational Classroom Talk by Activities and Content Areas

The second research aim was to explore whether different types of educational classroom talk varied depending on activities and the focus on specific content areas during the exchanges (analysis level of macro). Table 1 shows the occurrence of each of the four types of educational classroom talk by content areas: music, art/play, academic content, and routine/lunch. Out of the total number of 222 identified communicative events, 189 represented IRF exchanges, 8 were open naming exchanges, 12 were open informal discussions and 13 were educational dialogues. In music sessions, 45 (97.83%) IRF exchanges dominated the identified communicative events. All four types of educational classroom talk were identified during art/play (in total, 36 communicative events, of which 22 (61.11%) were IRF exchanges, 8 (22.22%) were open naming, 3 (8.33%) were open informal discussions, and 3 (8.33%) were educational dialogues). In academic content focussed sessions 122 (90.37%) IRF exchanges dominated the interaction but also some educational dialogue (n=9, 6.66%) and open informal discussions (n=4, 2.96%) were found. The five communicative events identified during routine/lunchtime comprised predominantly from open informal discussions (n=4, 80.0%).

[Table 1 near here]

Activity settings included whole-group and small-group/centre-based activities. Table 2 represents the distribution of the four types of educational classroom talk across activity settings.

IRF exchanges prevailed in whole-group activities (115 communicative events, 60.85%). The majority of the communicative events of open naming, open informal discussion, and educational dialogue were identified during small-group/centre-based activities.

[Table 2 near here]

Discussion

The aim of the present study was to explore types of educational classroom talk in ECE and whether the occurrence of the types of educational classroom talk varied depending on activity setting and content area. Twenty-nine transcribed videos from 11 ECE centres in the UAE were analysed qualitatively, partly theory driven and partly data driven, with respect to communicative acts, communicative events and communicative situations. Four types of educational classroom talk were identified in the present data: IRF, open naming, open informal discussion, and educational dialogue. IRF exchanges dominated classroom talk, independent of content area and activity setting. When taken together with the results of previous studies on educational classroom talk in ECE settings (e.g. Muhonen et al. 2018; Rasku-Puttonen et al. 2012), the present findings suggest that IRF exchanges can have an important role as a form of educational classroom talk. Such brief communicative events, during which teachers intentionally keep exchanges simple, may encourage the participation of several children in the classroom. IRF exchanges might thus provide opportunities for very young children to practice classroom talk and knowledge sharing. Importantly, evidence of more complex educational classroom talk was also found in the present data: Though their use was limited, open informal discussions and educational dialogues were found to occur as early as in ECE, in particular, during small-group activities.

Types of Educational Classroom Talk

The first research question focused on the different types of educational classroom talk in ECE centres in UAE. In line with previous research (e.g. Rasku-Puttonen et al. 2012), the present results confirmed IRF exchanges as the dominant type of classroom talk. In the literature, IRF exchanges are often viewed in a somewhat negative light, as they are likely to constrain children's contributions and foster passivity (Barnes 2008; Lyle 2008). However, in early childhood settings, IRF exchanges may present important opportunities for young children to practice classroom talk (Rasku-Puttonen et al. 2012). It is possible that such brief and simple exchanges represent an emerging form of classroom talk that enables children to participate by sharing their knowledge. In their study of kindergarten classrooms, Rasku-Puttonen et al. (2012) explained that, during IRF exchanges, teachers kept their questions optimally low to ensure that even children with less advanced skills were able to participate and demonstrate their knowledge. In fact, IRF exchanges can also play an important role in building more complex events of classroom talk (Barnes 2008; Rojas-Drummond and Mercer 2003). This phenomenon was especially evident in IRF sequences that followed each other. In these spiral IRF sequences (see Rojas-Drummond et al., 2013), more elaborated knowledge could be reached, compared to single and separate sequences.

The three remaining types of educational classroom talk (open naming, open informal discussion, and educational dialogue) occurred notably less often than IRF exchanges in the present data. In all three, the nature and structure of interactions were more open and free compared to IRF exchanges. Open naming exchange could be considered as a slightly more elaborated form of classroom talk moving from IRF exchanges toward more extended forms, such as open informal discussion and educational dialogue. Open naming provided more space for elaboration and

sharing of different viewpoints, thus supporting shared knowledge building and active student participation. In ECEC, open naming can offer several children an opportunity to share their knowledge without prolonged explanations or arguments. Compared to open naming, open informal discussion and educational dialogue consisted of longer, more cumulative and more diverse exchanges between the teacher and children. However, the relatively low number of identified educational dialogues (and open informal discussions) in the present data, supports the conclusion of previous research that educational classroom dialogue is scant at all levels of schooling (Howe and Abedin 2010). Research has shown that teachers often fall short when it comes to utilizing dialogue-supporting strategies, such as asking open questions, using feedback loops, and encouraging students to share their thinking in classroom interactions with their students (Gillies 2013; Houen et al. 2016a, 2016b; Webb et al. 2009). For example, teacher questioning has been shown to play an important role in defining the quality and nature of classroom talk: Closed questions are most likely to elicit short answers from students, whereas open questions are more likely to generate extended and reflective classroom talk (Alexander 2000). In addition to teacher's questioning and scaffolding, many other factors such as children's previous knowledge about the topic, motivation or interests may have an impact how the discussion will grow and flow.

An important implication of the present study is that educational classroom talk should not always be considered as "formally arranged." For example, open informal discussion on an educational topic or content was found during lunch although the classroom talk and situation itself might not have been planned with a view to achieving a specific learning goal. Similarly, in a cross-country study of classroom talk in primary schools, Alexander (2000) found variations in the form and organization of classroom talk. In the United States and England, more informal conversations dominated classroom talk, whereas in Russia, for example, classroom talk was

highly structured and controlled by the teacher. However, in the future, more research on informal and formal classroom talk in different countries is needed to examine their occurrence, as well as their effects on children's learning outcomes.

Educational Classroom Talk across Activity Settings and Content Areas

The second research question aimed to explore variations in educational classroom talk across activity settings and content areas. Similar to previous studies in kindergarten classrooms (Rasku-Puttonen et al. 2012), the dominance of IRF was also present in our study. Most of the communicative events were identified during academic content focussed sessions. In ECE, early literacy and numeracy learning goals focus predominantly on letters and numbers. Such learning requires more repetition than elaboration and is aimed at children memorizing letters and numbers. It may thus be suggested that IRF, as an emerging form of educational classroom talk, may favour interactions focusing on relatively narrow academic learning contents and memorization of content.

However, and in line with Muhonen et al. (2016), we also found that the limited number of open informal discussion and educational dialogue occurred most likely during situations with a focus on academic content. Similar results have also been reported by Slot et al. (2016) who observed educational dialogue events more frequently during academic activities compared to play and art activities. A possible explanation could be differences in teachers' role (and their belief systems) for various ECE classroom experiences (Lara-Cinisomo et al. 2009). Early numeracy and literacy are commonly seen as instructional subjects, a fact that, in recent years, had yielded in the development and implementation of systematic curricula for early childhood literacy and numeracy education. The teacher purposefully and intentionally creates relevant learning

opportunities, thus "taking an active role in guiding explorations and creating encounters that make [academic] thinking explicit and usable within the classroom" (Hachey 2013). In contrast, play is seen by teachers as an open, rather unstructured time during which children are allowed to explore, be creative and experiment with their skills and the materials available to them (Lara-Cinisomo et al. 2009). Because teachers might not aim to achieve specific learning goals, they might be less likely use proactive scaffolding during play that, in turn, might result in less extended classroom talk. A similar approach may also be associated with routine activities. It is important to note, however, that this does not mean that play- and routine-based talk cannot have a deeper meaning or learning goal. In our data, for example, we found open informal discussion to occur during lunchtime.

The findings of the present study also showed that IRF exchanges also prevailed whole-group activities, whereas the majority of the other types educational classroom talk occurred mainly during small-group activities. Traditionally, IRF exchanges have been criticized for its low activation of children, especially if the question being asked is closed (Barnes 2008). Nevertheless, the use of IRF should be carefully evaluated, taking into account the context and activity. Generally, it has been shown that classroom quality and teacher–child interactions are lower in large classes where it is challenging for teachers to orchestrate and encourage all children to participate in interactions (Graue, Rauscher, and Sherfinski 2009). Our findings suggest, that shared knowledge may be built more equally between teacher and children in small groups where the teacher can allocate more time to each student for argumentation, thought-provoking questions, and child-centred scaffolding, which have been suggested to favour the emergence of dialogue (Cazden 2001; Nystrand 1997; Rojas-Drummond and Mercer 2003).

Implications, Future Directions, and Limitations

To date, there is very limited research—especially studies utilizing qualitative methods of analysis—on the types (and quality) of educational classroom talk in ECE settings. The present study adds to the literature by identifying different types of educational classroom talk in ECE in the UAE. The findings are important to the UAE and other GCC countries, where besides very few studies (see Muhonen et al. 2018; Suchodoletz, Barza, and Larsen 2019) scarcely any information exists on the quality of early childhood education and care programs, and especially classroom interactions, despite the rapid development of these countries. The UAE's National Child Care Standards (2009) highlight the structure of education and care, but surprisingly little attention is paid to the processes of education and care. The findings of the present study are encouraging, as they provide evidence for the occurrence and variation of educational classroom talk in ECE centres. However, the majority of the identified communicative events represented the most restricted form—that is, IRF exchange. The next step would be to increase the number and quality of the more extended and reflective types of classroom talk (educational dialogue and open informal discussion) that activate and support children's skills to share their thoughts and give reasons for their opinions. This is important since the benefits of conducting educational classroom talk can extend beyond the boundaries of academic learning. Children's developed dialogue and shared knowledge-building skills can have a positive impact on their lifelong learning (Kumpulainen and Lipponen 2010) and help them become active and communicative citizens. It is, therefore, important to support children's natural curiosity and eagerness to share their knowledge and experiences from as early as ECE (Muhonen et al. 2016).

To support the development of dialogic competencies both in the UAE and globally, the importance of educational classroom talk should be acknowledged in the curriculum and teacher

education. Teachers are used to dominating the classroom talk and moving from monologic to dialogic classroom talk is challenging (Myhill et al. 2016). Teachers need knowledge, tools, and practical training on how to scaffold productive classroom talk with children. In particular, teachers need to be trained to recognize suitable moments for classroom talk by paying attention to questioning and balancing their actions against the needs and interests of their students (Rasku-Puttonen et al. 2003; Rojas-Drummond et al. 2013). Research has suggested that the development of language skills varies in the early childhood years and that children might understand more words than they actually produce (Gibson, Peña, and Bedore 2014), which is why teachers' active scaffolding and encouragement to interact is needed. In the future, more studies should be conducted on the quality and occurrence of educational classroom talk in ECE in order to map the next steps that need to be taken to support teachers in their efforts to incorporate high-quality and developmentally appropriate classroom talk into ECE classroom.

The present study has multiple limitations. First, the duration of the video-recorded sessions varied across classrooms, since the teachers decided when and what was recorded. Because it was the first study of this kind in the UAE, in future studies we should aim for a more standardized selection of activities and content lessons. Second, the video recordings focused on the teacher and her interactions with the children. As a consequence, peer interactions outside the teacher's focus might not have been recorded. To avoid bias, peer interactions were thus generally excluded from the analysis. However, we do acknowledge the importance of peer interactions in ECE classrooms and that they should be examined in future research. Third, both English and Arabic were utilized as interaction languages in the classrooms. Numerous children and teachers were not native speakers of the language used in the classroom, which might have had an effect on the quality of interactions between them. This situation is also common outside the UAE; due

to increasing global immigration, a growing number of children around the world do not study in their native languages. Therefore, more research is needed on educational classroom talk among non-native speakers. Fourth, a larger and longitudinal sample size is required to enable a more in-depth examination of the variations and development of the different types of educational classroom talk. Finally, the analysis concentrated solely on verbal communication. Nonverbal interactions may be another important unit of analysis that should be considered in future research. For example, children might respond to questions nonverbally by drawing a letter or number on the whiteboard or raising their hands. Such interaction sequences were not taken into account in the analysis, although they can be considered to reflect IRF exchanges. Despite the several limitations, the present study provides important information for the development of young children's learning environments.

Conclusions

The present study is among the first to examine the occurrence and variation of educational classroom talk in ECE centres. It also makes an important contribution by providing a deeper understanding of how teachers create opportunities for very young children to participate in educational classroom talk. The study was conducted in the UAE, a country whose educational system and its quality have been examined to a very limited extent. The findings showed that IRF exchanges dominated teacher-child classroom conversations, compared to more extended and reflective types of educational classroom talk. The communicative events of the latter types occurred in small-group activities, which may provide more space and time for versatile child participation and teacher's scaffolding of individual children. IRF can be considered a functional method of activating a large group of children in classroom interactions; however, more active teacher scaffolding and space for children's elaboration and argumentation are required to increase

the number and quality of more extended educational classroom talk, such as educational dialogue. To support children's natural curiosity, they should be encouraged to participate in and learn the practice of classroom talk from as early as their ECE years. For this development to occur, the importance of educational classroom talk and practical training in this area should be acknowledged in both preservice and in-service ECE teachers.

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Table 1

Types of educational classroom talk within content areas

	IRF	Open naming	Open informal discussion	Educational dialogue	Number of communicative events in total	Average number of communicative events per video-recording
Music	45 (97.83%)		1 (2.17%)		46	5.75
Art/Play	22 (61.11%)	8 (22.22%)	3 (8.33%)	3 (8.33%)	36	9
Academic content	122 (90.37%)		4 (2.96%)	9 (6.66%)	135	9
Routine/ Lunch			4 (80.0%)	1 (20.0%)	5	2.5
In total	189 (85.14%)	8 (3.60%)	12 (5.40%)	13 (5.86%)	222	7.66

Table 2

Types of educational classroom talk within activities

	IRF	Open naming	Open informal discussion	Educational dialogue	Number of communicative events in total	Average number of communicative events per video-recording
Whole group activity	115 (60.85%)	1 (12.5%)	1 (8.33%)	3 (23.08%)	118 (53.15%)	6.94
Small group / centre activity	74 (39.15%)	7 (87.5%)	11 (91.67%)	10 (76.92%)	104 (46.85%)	8.67
In total	189	8	12	13	222	7.66