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of European Early Childhood Education and Care



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Executive summary

This report presents the findings of a multiple case study, conducted in seven European countries to examine common and culturally differing aspects of curriculum, pedagogy, and quality of Early Childhood Education and Care (ECEC) provisions in Europe. This multiple case study involved intensive data collection on structural characteristics, process quality, implemented curricula and pedagogical approaches in four ECEC centers in each of the seven countries that were considered examples of 'good practice' by national experts. A multi-method approach was used to obtain a comprehensive overview of the different aspects of quality in classrooms for 0-3 and 3-6-years-old children. Video recordings were made of four common situations in ECEC centers, i.e. play, mealtime, creative activities and educational/emerging academic activities, which were used to evaluate process quality with a standard observational tool, namely the CLASS Toddler and CLASS Pre-K and to analyse occurring educational dialogues in-depth. The CLASS was chosen as an example of a well-developed, theory-based standard observation instrument that is currently widely used in several countries in different continents. In addition, educator reports were used to collect information on structural educator, classroom and center characteristics as well as information on the curriculum of the provision of different types of activities focusing on (pretend) play, self-regulation and pre-academic activities, including language, literacy, math, and science activities. Finally, information on educator's beliefs and perspectives on classroom process quality was collected through personal interviews and focus group discussions with professionals in all participating countries.

A total of 28 ECEC centers (14 centers for 0-3-year-olds, 14 centers for 3-6-year-olds) participated in the case study, involving in total 77 educators (of whom 41 worked in 0-3 classrooms). Videos were made of four common activity settings in ECEC (1) play, (2) mealtime, (3) educational/emerging academic activities, and (4) creative activities to increase comparability across countries, resulting in a total number of 62 videos for 0-3 classrooms and 62 videos for 3-6 classrooms (total number of 124 videos). The videos were coded using the CLASS Toddler and Pre-K versions by two experienced coders (from Finland and Portugal) and 25% of the data (i.e. one video per center) was double coded by an experienced coder from another country (the Netherlands) revealing good inter-observer reliability.

The results based on the video data showed that the emotional support and classroom organization was in the high range, whereas the instructional support was in the mid range in this selective sample of good centers. This pattern reflects the general pattern found in ECEC classrooms, but with somewhat higher average scores than previous studies have found that used the CLASS, reflecting that, indeed, 'good practices' were selected for this study. The overall high level of process quality also indicated that what was thought good practice in one country was by-and-large also considered good practice in another country.

However, there was also considerable variation in the quality assessments that could be attributed to the type of activity setting, group size (small vs. large group) and arrangement and to constellations of structural characteristics of the participating centres. In 0-3 classrooms play and educational/emerging academic activities provided the best opportunities for children to be engaged in higher quality processes, both with regard to emotional support and support for learning and development from educators. In 3-6 classrooms educational/emerging academic activities also showed the highest quality in both domains, but play situations now showed somewhat lower quality

in instructional aspects. The difference might emerge from the different role of educators in children's play: in 0-3 classrooms play was more often actively guided and facilitated by educators, whereas in 3-6 classrooms educators tended to take a monitoring role or not to be present in play situations. This finding might reflect in general an increased reliance on children's play skills and putting more emphasis on developing children's autonomy and peer relations via play as children grow older.

Moreover, process quality was higher during small group activities compared to whole group activities, which was particularly evident for the dimensions regard for children's perspectives, quality of feedback and language modelling. The content of the activity was also associated with process quality. Process quality was rated higher for example during science activities than during other educational/emerging academic activities. It appeared that science activities mostly concerned hands-on activities which, on average, were provided in smaller groups compared to language and literacy activities that were more often provided in the whole group and included activities such as circle time talk, shared reading and singing songs.

Educators reported on the curriculum activities and children's behavior that are seen as important for children's development, in particular pretend play and self-regulation, and different types of pre-academic activities, including language literacy, math, and science activities. There appeared to be different patterns for 0-3 and 3-6 classrooms, with an emphasis on the provision of self-regulation and pre-academic activities for older children. However, there appeared to be differences between centers in different countries as well, likely reflecting variation in pedagogical traditions. On average, there seemed to be a stronger focus on language and math activities than on literacy and science activities, in both 0-3 and 3-6 classrooms. When distinguishing between different types of curricula it appeared that a *balanced curriculum* with roughly equal emphasis on play, self-regulation and pre-academic activities was related to the highest observed process quality. A predominant orientation on play in 3-6-years-old classrooms, at the expense of other types of activities, appeared to be related to lower instructional support for children's learning although emotional support and classroom organization were in high level also in these classrooms. This points to the importance of having a curriculum with a good balance between different types of activities to support children's holistic development.

There was considerable variation in *structural quality* (groups size, ration) across centers, but different *combinations* of characteristics together with children's age range, rather than single aspects, appeared to be related to higher observed process quality and to the implementation of a balanced curriculum. Moreover, both a favourable group size and a favourable children-to-staff ratio were found to be related to higher process quality, although not in combination, which can be explained by the choices educators make in preparing and organizing the day and the activities they provide to children. Based on our field notes in larger classrooms educators provided more activities in smaller groups throughout the day. Altogether, the findings indicate that a smaller group size with fewer educators or a larger group size with more educators were both related to higher quality and a more balanced curriculum.

Other quality aspects included opportunities for additional *in-service training*, *professional development* activities provided at the center and the overall *organizational climate* in the center, which were all found to be important for process quality and curriculum emphasis. Additional in-

service training with longer work experience was related to higher process quality in 0–3 classrooms and to a balanced implemented curriculum, which in turn was related to the highest process quality. Also opportunities for continuous professional development in the center with high organizational climate, including team meetings to discuss the developmental and educational goals of working with children, coaching, and using collegial observation and feedback to improve practice, was related to high observed process quality and a stronger emphasis on the provision of self-regulation and educational/emergent academic activities compared to other centers. These results were strongest when educators also evaluated the overall organizational climate of their center higher in terms of collegiality, supportive supervision, joint decision-making and clearly defined goals based on a shared mission and orientation.

For the in-depth investigation of *educational dialogues*, the recorded play and educational/emerging academic activities of the 3-6 classrooms were analysed using a qualitative content analysis. Educational dialogues are considered a specific form of collective, reciprocal, and purposeful interactions in which there are extended verbal exchanges between the educator and children involving questioning, listening to each other and sharing of different ideas and points of view. In total, 8 episodes of educational dialogues were identified out of 28 video recordings, which mostly concerned educational/emerging academic activities in both small and large group settings, mainly addressing topics of science and math (5 out of 8). The remaining educational dialogues were identified in play situations. The educational dialogues that were identified in educational/emerging academic activities were more likely to be educator-initiated whereas the educational dialogues that emerged in play were initiated by children. Not all children in the group were equally actively taking part on the educational dialogue. The number of children actively contributing to educational dialogues ranged from 2 to 8 children per episode and the *proportion* of actively engaged children was higher in small groups compared to large groups. The educator's role in the dialogues varied from a more leading role to a role as facilitator. Children were more likely to engage in a dialogue when the topic was familiar, related to their personal experiences and when hands-on materials or concrete examples were used. The videos in which educational dialogues were identified were also rated higher on the CLASS Pre-K dimensions Concept development, Quality of feedback, and Language modelling, attesting to the validity of the concepts measured with the CLASS as a process quality assessment instrument chosen to use in this multiple case study. The in-depth analysis of educational dialogues provided more detailed information on how back-and-forth exchanges between educators and children evolve, and on the specific strategies educators use to initiate or maintain the educational dialogue: The verbal interaction was often structured around educators asking questions and children providing answers, but during educational dialogues children were adding actively new themes to the topic and on few occasions building a chain of reasoning independently. Educators enhanced educational dialogue by validating children's comments and by allowing the discussion to follow their initiations. By asking for children's opinions and by using open questions, children were better able to contribute to educational dialogue.

In our culture sensitive analysis there appeared to be a high level of agreement among professionals across countries about what constitutes high process quality. A group of 84 professionals from at least one center in each country participated in focus group discussions or in personal interviews to investigate their values and beliefs regarding classroom quality and to discuss their reflections on their own practices within a video cued situations. The professionals from 6 European countries mentioned three main goals of ECEC: (1) supporting children's autonomy, (2) creating a sense of

belonging, and (3) fostering children's learning. There was wide consensus about the importance of a warm, positive classroom with sensitive educators adopting a child-centered approach which can support children's learning. These aspects of quality were, generally, found to be well reflected in the standard assessment tool used in the current study for evaluating process quality, that is, the CLASS. However, the European professionals also strongly valued belonging to a group and being part of a community, the possibility to establish and develop peer relations, and a focus on broad developmental goals by striking a balance between 'soft' and 'hard' skills. These aspects were found to be less well reflected in the CLASS, which is more focused on dyadic adult-child relationships and puts less emphasis on peer relations and peer learning. Promoting a critical cultural approach to evaluation tools means also ceasing to consider the relationship between the tools and the services they evaluate only in a top-down, unidirectional way. Assessment and validation-adaptation processes can benefit from a reversed perspective that involves professionals in a reflective experience and an intercultural dialogue supported by and with the instruments. It offers educators an enriching opportunity to express the definitions of quality underlying their practices; to acquire a deeper awareness of them; to compare and even intentionally contaminate their local theories with values embedded in the instrument. It can therefore foster professional development and reflection and, consequently, improve quality. Altogether, the findings indicate a European perspective on classroom process quality that is not fully captured by standard quality assessment tools that were developed in other cultural, more individualistic, contexts, such as the United States. This calls for extension of existing tools or for development of new tools that can capture the European perspective.

Recommendations

- 1) A balanced curriculum which focus on broad developmental goals by striking a balance between 'soft' and 'hard' skills in child development can be considered to be basis for the high process quality in classroom practices that influence children's holistic development and learning.
- 2) Providing more small group activities can be an effective way to combine a more child-centered approach with stimulation of children's deeper learning and development. Incorporating small group activities into the daily routines can be beneficial in terms of emotional and instructional process quality, meaning that if the overall group size is not favourable, as long as educators use opportunities for the provision of activities in smaller groups balancing whole group and small group activities during the day can support the process quality of activities.
- 3) In line with a stronger focus on collaborative and peer learning, the use of educational dialogues seems a good way to integrate child-centeredness with the stimulation of children's cognitive and language development from a collective, group-based perspective. Increasing educator's knowledge on educational dialogues and how to incorporate them into daily activities can enhance process quality and increase children's involvement in activities, thus making these experiences more meaningful.

- 4) The provision of science activities turned out to be related to the highest process quality, yet given the least emphasis in current ECEC curricula according to educators' self-reports. Science activities, including exploration and discovery while using hands-on materials, provide ample opportunities for reflection and discussion and educational dialogues, and can facilitate deeper understanding, promote children's reasoning and thinking skills, and elicit complex language use, while allowing children initiative and self-determination.
- 5) Current widely-used standard observation instruments to assess quality in ECEC, for 0-3 and 3-6-years-old , such as the CLASS Toddler and CLASS Pre-K, provide a framework to assess quality, but need to be complemented by observation tools that (a) address educators' group-sensitivity and strategies to strengthen group-belongingness, peer-interaction and peer-learning, (b) assess the flexible use of subgroup arrangements within the larger group to provide more guided small group work, (c) focus more specifically on the occurrence of educational dialogues, (d) evaluate to what extent social-emotional and personal 'soft' skills are fostered, such as self-regulation, problem-solving, creativity, collaboration and citizenship next to traditional 'hard' academic skills, and (e) determine to what extent inclusiveness and positive attitudes towards diversity are promoted. It is recommended to initiate the development of additional observation and self-evaluation tools that build on instruments such as the CLASS, but are extended as outlined here to serve the goals of European ECEC better.
- 6) In view of enhancing process quality in ECEC centers a promising way seems to be providing possibilities for continuous professional development for educators in the centers. This seems especially effective when embedded within an overall supportive organizational climate. To create opportunities for educators' continuous professional development together with the policy level support for centers will benefit the quality of ECEC in Europe.

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Introduction

This report focuses on common and culturally different key-elements of curricula, pedagogical approaches, process quality and educational dialogues and aims to determine the cross-cultural validity of curriculum and quality assessment systems by observations of good practices in different European cultural contexts. The report is part of the project *Curriculum Quality Analysis and Impact Review of European Early Childhood Education and Care (CARE)*, funded by the European Union's 7th Framework program (THEME [SSH.2013.3.2-2] Early childhood education and care: promoting quality for individual, social and economic benefits). The particular part of the project reported here is included to WP2 focusing on *Curriculum, pedagogy, and classroom quality: promoting effectiveness of ECEC*.

The objectives of the task are directly related to the overall aim of WP2 and the entire CARE-project, namely to develop a comprehensive, culture-sensitive European framework for evaluating and monitoring ECEC quality and child wellbeing, and to propose indicators of ECEC quality and child wellbeing that can be used for educational policy making at the European level. Within the CARE-project, WP2 specifically focuses on micro- and meso-level characteristics of ECEC that constitute quality *in practice* and that directly affect children's wellbeing, learning and development. To the tasks of WP2 belong the following already completed studies: (1) a comparative analysis of European curricula (Sylva, Ereky-Stevens, & Aricescu, 2015; deliverable D2.1) and (2) the relations between structural quality and process quality (Slot, Lerkkanen, & Leseman, 2015; deliverable D2.2). Other completed studies of the CARE-project are: (3) a comparative review of approaches to ECEC staff professionalization in Europe (Jensen et al., 2015; D3.1), (4) an updated review of research into the impact of ECEC on child development (Melhuish et al., 2015; D4.1), (5) a literature review on the effectiveness of different types of funding and governance of ECEC (Akgündüz et al., 2015; D5.1), (6) Initial framework for evaluating and monitoring ECEC quality and wellbeing (Moser et al., 2015; D6.1), and (7) a first report on the views of parents as important stakeholders of ECEC regarding quality and wellbeing (Broekhuizen et al., 2015; D6.2). Still ongoing studies within CARE address (8) a meta-analytical review of effects on child outcomes, including recent European studies, (9) an in-depth analysis of innovative approaches to continuous in-service professionalization, (10) an analysis of factors determining the accessibility and inclusiveness of ECEC, and (11) an economic analysis of the costs and benefits of ECEC.

The evidence that high structural and process quality of early childhood education and care (ECEC) shape children's later learning and development (Heckman & Masterov, 2007) has recently influenced both policy and practice. Previous literature has shown that the structural quality of ECEC, such characteristics as the adult-child ratio, educator characteristics, and curriculum and environmental components, are positively related to children's academic skills (Sylva et al., 2006), while the high quality of classroom process characteristics — referring to adult-child interaction, scaffolding, a positive classroom climate, classroom talk and opportunities to learn — has been found to predict both children's cognitive, academic and social skills (Mashburn et al., 2008; Peisner-Feinberg et al., 2001) supporting stronger entry to school (Pakarinen et al., 2010), and better adolescent and adult outcomes (Campbell et al., 2002; Nores et al., 2005; Reynolds et al., 2002). However, in many cases the highest quality ECEC settings included in these studies combine the best of structural and process quality, such as well-trained staff, favorable ratios, effective pedagogical

practices, and ongoing professional development for positive adult-child interactions (see also Slot, Leseman, Verhagen, & Mulder, 2015).

The structural quality of ECEC has been studied extensively while process quality has been more challenging to capture. Process quality refers to children's actual daily experiences in their programs while involved in activities and interactions and, as such, encompasses the physical, emotional, social, and instructional aspects of children's interactions with educators, peers, and materials (Howes et al., 2008; Layzer & Goodson, 2006; Pianta et al., 2005; Sylva et al., 2006; Thomason & La Paro, 2009). It focuses on how curriculum is applied in practice and what happens within a classroom. Accordingly the pedagogical practices educators use in daily activities are an important aspect of process quality. Therefore, increasing attention has been recently paid to process quality in ECEC from research to governments at policy level (OECD, 2014) and to educator training and professional development programs and interventions (Pianta et al., 2008b).

The aim and research questions of the study

The original objective of the study reported here, as stated in the Description of Work (DOW) was the following:

2.6. To identify common and culturally different key-elements of curricula, pedagogical approaches, process quality and educational dialogues (e.g., reciprocity, participation of children, sustained shared thinking, and educator feedback) and to determine the cross-cultural validity of curriculum and quality assessment systems by observations of good practices in different European cultural contexts.

The specific task was to create multiple case studies on curriculum implementation, pedagogical approach, process quality and educational dialogues using video-data from four 'good practice' ECEC centers to analyse the process quality and the quality of educational dialogues, and also collect questionnaire data from educators concerning curriculum implementation and pedagogical approach in each center. The study was conducted in 28 ECEC classrooms for 0-3 and 3-6-year-old children, considered to constitute 'good practices' according to national criteria and/or expert opinion, in seven European countries (England, Finland, Germany, Italy, Netherlands, Poland, and Portugal) that represent relevant variation in welfare regimes, ECEC systems and cultural values. Although the principal investigators of this study (main authors of this report and key-persons involved in WP2) have made analysis and reported the results, at joint meetings all partners of WP2 have contributed to interpretation and integration of the findings to identify commonalities and cultural differences and evaluate the cross-cultural validity of the assessment instrument, the Classroom Assessment Scoring System (the CLASS, Pianta, La Paro, & Hamre, 2008). Also educator questionnaires were used to report curriculum implementations and pedagogical approach to identify good practices, to analyse commonalities and differences across European countries, and to validate curriculum and classroom quality assessment. Finally, the qualitative cultural study will reach deeper culturally sensitive understanding of the quality in ECEC systems in Europe.

In view of these premises, the present study addresses the following set of research questions concerning each Study 1 to 5:

Study 1: How does process quality in selected ECEC classrooms with ‘good practices’ vary according to the curriculum activities, and what kind of pedagogical practices can be identified?

Study 2: How do the types of curriculum activities differ depending on the age of children and what are the relations with curriculum activities and observed process quality?

Study 3: How do educator characteristics, structural quality and organizational characteristics of the ECEC centers relate to observed and reported quality and practices?

Study 4: What kind of patterns of educational dialogues can be identified in the 3–6-years-old ECEC classrooms during educational/emerging academic activities and free play; How do educators’ pedagogical practices support and enhance educational dialogues; and How does observed classroom quality reflect the similar characteristics with educational dialogues?

Study 5: How to give greater ecological validity to the cross-national case studies and to the international encoding with CLASS; How to enhance the emerging cultural points of view in order to identify important aspects regarding the quality of the selected contexts, that standardized tools and the required international encoding could not achieve without the involvement of the perspectives of the “insiders”; How to identify similarities and differences in the ways that each country interpret ECEC quality and curriculum; and How to introduce qualitative (ethnographic) approaches, tools and processes particularly suited to case studies in cross-cultural contexts?

Structural and process quality of the classroom

There is strong evidence that in general the participation in ECEC is beneficial for child development and for their school readiness (Gormley et al., 2008; Loeb et al., 2007; Magnuson, Ruhm, & Waldfogel, 2007). However, the quality of ECEC seems to make a difference. For example, the Effective Pre-school and Primary Education (EPPE) project in U.K. has demonstrated that higher quality provision was associated with greater benefits for children while low quality ECEC was less likely to lead to clear benefits (Melhuish, 2004).

Both *structural and process qualities* are related to child outcomes (Pianta & Hamre, 2009; Sylva et al., 2006). Structural quality of the classroom is relatively stable from day to day. It includes aspects such as group size, children-to-staff ratio, and educators’ professional competences. Structural quality characteristics are seen to determine child outcomes via process quality (Burchinalet al., 2002; Howes et al., 2008; LoCasale-Crouch et al., 2007; Pianta et al., 2005; Sylva et al., 2006). For example, children in smaller ECEC classrooms have shown better academic skills later on (NICHD, 2002).

Besides structural characteristics, the classroom’s *process quality*, such as a close adult–child relationship and emotional interaction, has been found to predict both children’s academic and social outcomes (Mashburn et al., 2008; Peisner-Feinberg et al., 2001). Adult–child interaction has been studied intensively during the recent decades (for meta-analyses, see Cornelius-White, 2007). Supportive adult-child relationship is documented to contribute to children’s academic achievement

and successful schooling outcomes (e.g., Burchinal et al., 2002; Crosnoe et al., 2010; Howes et al., 2008; Skinner et al., 2008), to peer acceptance (e.g., Hughes & Kwok, 2006; Hughes et al., 2006), and to have long-lasting effects on academic achievement (e.g., Hamre & Pianta, 2001; Pakarinen et al., 2016). Children from ECEC classrooms with higher process quality enter school with better language, reading and math skills (Burchinal et al., 2000; Pakarinen et al., 2011; Pianta et al., 2002) and they have better social competence (Peisner-Feinberg et al., 1999; Siekkinen et al., 2013). Process quality refers to the child's daily experience in classroom (Cadima et al., 2010; Howes et al., 2008; Layzer & Goodson, 2006; Lerkkanen et al., 2012; Phillips & Lowenstein, 2011; Sylva et al., 2006) which are planned in the curriculum describing what children can experience by the activities and which competences and skills they can develop (Oberhuemer, 2005a; Pianta et al., 2005; Sylva et al., 2007). However, the level of process quality seems to vary between classrooms and centers.

Previous research on the quality of classroom interactions and pedagogical practices has relied on several approaches and used a variety of concepts. These include developmentally appropriate practices (DAP; e.g., Copple & Bredecamp, 2009; NAYEC, 2009), classroom quality (La Paro, Pianta, & Stuhlman, 2004; Pianta, La Paro, & Hamre, 2008), effective teaching (Bogner et al., 2002; Brophy, 1999), child-centered versus teacher-directed practices (Kikas et al., 2014; Lerkkanen et al., 2016; Stipek & Byler, 2004), and individualizing instruction (Connor et al., 2009). Despite the different concepts, the approaches make similar assumptions regarding the key elements of adult-child interactions in children's learning: (1) social and emotional elements, (2) classroom management or organization, and (3) instructional or cognitive components. These are also the domains of classroom interactions that are crucial for children's academic outcomes: classroom management, classroom climate, and the type of instruction evidenced in the classroom (e.g., La Paro, Pianta, & Stuhlman, 2004; Pianta, La Paro & Hamre, 2008). First, child outcomes have been found to be related to educators' *management* strategies (i.e., clarity of rules, management of students' behavior, time, and attention) of learning activities and behavior in the classroom (e.g., Emmer & Stough, 2001). Second, there is also clear evidence that classroom *climate* (i.e., a positive and warm adult-child relationship characterized by the educator's regard for children's perspectives and responsiveness to their needs and interests) contributes to children's adjustment and development of academic skills (e.g., Birch & Ladd, 1997; Connor et al., 2005; Hamre & Pianta, 2005). Finally, a high quality of classroom *instruction* (i.e., active monitoring and scaffolding of children's learning and thinking, and tailoring the instruction) has also been shown to contribute to children's academic skills (e.g., Connor et al., 2005; La Paro, Pianta, & Stuhlman, 2004; Lerkkanen et al., 2016; Mashburn et al., 2008).

Classroom Assessment Scoring System (CLASS)

Several observational measures have been developed for measuring the process quality in classrooms. Both global rating scales, such as the Early Childhood Environment Rating Scale (ECERS-R; Harms, Clifford, & Cryer, 1998; ECERS-E; Sylva et al., 2006), and direct observation of classroom interactions, such as the Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2008) have been applied in various cultural contexts.

In the present study, the CLASS tool was applied for measuring the quality of adult-child interactions in ECEC classrooms. The CLASS was chosen because it provides a standardized and validated way of assessing adult-child interactions across age groups and across activities (Pianta & Hamre, 2009). The CLASS has been recently used in several European countries, and its validity has been established in

European contexts, for example in Finland (Pakarinen, et al., 2010), Portugal (Cadima et al., 2016a, 2016b), Netherlands (Slot, Leseman, Verhagen, & Mulder, 2015) and Germany (Suchodoletz, Fäsche, Gunzenhauser, & Hamre, 2014). Another reason for selecting the CLASS was that it is based on identifiable dimensions of adult–child interactions shown in previous studies to contribute in a meaningful way to child development (Hamre et al., 2007; Pianta & Hamre, 2009). Although the CLASS framework shares many features with other approaches, it is unique in its strong theoretical basis, its empirical validation, and applicability to a range of early childhood and elementary classroom settings (Hamre & Pianta, 2007).

The Teaching Through Interaction (TTI; Hamre et al., 2013) framework conceptualizes classroom quality in terms of adult-child interactions that are likely to contribute to child’s learning and development and uses the CLASS as a tool to measure it. The TTI framework leans heavily on earlier theoretical and empirical educational and psychological literatures. Classroom processes are operationalized in several specific dimensions involving emotional, organizational, and instructional features of the classroom (Pianta & Hamre, 2009). These dimensions are organized into three broad domains of adult–child interactions, namely, emotional support, classroom organization, and instructional support (Downer et al., 2010; Pianta, La Paro, & Hamre, 2008).

Emotional support refers to dimensions of classroom interaction which support children’s social and emotional functioning (La Paro, Pianta, & Stuhlman, 2004; Pianta, La Paro, & Hamre, 2008). In classrooms with high emotional support, adults are sensitive to children’s needs and interests, and show responsiveness and warmth (Pianta, La Paro, & Hamre, 2008). Emotionally supportive educators also provide children with appropriate levels of autonomy and comfort (Pianta, La Paro, Hamre, 2008). Classrooms with high quality emotional support are characterized by positive tone and respectful interactions (Hamre & Pianta, 2007).

Classroom organization is defined in terms of routines and management in the classroom (Emmer & Stough, 2001). It is displayed, for instance, in how educators manage time and activities to promote children’s engagement in productive learning (Cameron, Connor, & Morrison, 2005; Cameron, Connor, Morrison, & Jewkes, 2008; Emmer & Stough, 2001). Educators in well-organized classrooms promote children’s learning by establishing clear expectations for behavior and well-established routines (Emmer & Stough, 2001), and help students to regulate their own behavior and to maintain interest in learning activities (Pianta, La Paro, & Hamre, 2008). Effective educators also actively monitor children’s schoolwork (Bru et al., 2002) and are proactive rather than reactive with regards to disruptive behavior (Yates & Yates, 1990).

Instructional support refers to the ways in which educators implement instructional discussions and activities to effectively support children’s cognitive and language development (Pianta, La Paro, & Hamre, 2008). In classrooms with high-quality instructional support, educators provide scaffolding (Yates & Yates, 1990), create opportunities for concept development, use questioning and feedback in supportive ways (La Paro, Pianta, & Stuhlman, 2004; Pianta, La Paro, & Hamre, 2008), and promote students’ problem solving, creative thinking, and complex language skills (Pianta, La Paro, & Hamre, 2008). Educators characterized by high provision of instructional support promote children’s learning by providing additional explanations and ideas (Meyer et al., 1993), by scaffolding and providing support (Bogner et al., 2002), and by asking optimally challenging questions (Dolezal et al., 2003). High quality feedback extends children’s learning by suggesting alternative ways of thinking and by

emphasizing deeper understanding of concepts rather than the correctness of answers (La Paro, Pianta, & Stuhlman, 2004).

Adult-child interactions creates educational dialogues

Recent research on classroom interaction also focuses on the role of talk to communicate with each other and to build meaning and understanding in the classroom (Dickinson, 2011; Mercer, 2010; Piasta et al., 2012). Language is a powerful tool for exploring ideas and creating common knowledge together in different content domains (Mercer & Littleton, 2007; Muhonen et al., 2016; Rasku-Puttonen et al., 2012). In the EPPE project ECEC centres that were found most effective in fostering academic skills and social-emotional competences in children, in-depth analysis of adult-child talk revealed that talk in these centres was characterized by frequent episodes of 'sustained shared thinking' (Siraj-Blatchford et al., 2003).

Child's development takes place in interaction with the surrounding social and cultural environment (e.g., Rogoff, 2003; Vygotsky, 1978). The importance of language in learning and development has been emphasized in several studies (e.g., Dickinson, 2011; Mercer & Littleton, 2007) where language and talk have been considered as tools of communication as well as tools of meaning making and constructing a deeper understanding. Educational dialogues refer to extended verbal exchange between the educator and children, during which the educator and children ask questions, listen to each other and share their points of view (e.g., Alexander, 2006). Educational dialogues are typically differentiated from educational interactions following Initiation-Response-Feedback (IRF) pattern (Sinclair & Coulthard, 1975) and from less purposefully oriented social sharing. Educational dialogues help children to reach higher levels of thinking through dialogical meaning-making (Alexander, 2008; see also Littleton & Howe, 2010) or shared sustained thinking (Siraj-Blatchford et al., 2003).

The broader goal of educational dialogues is to construct joint understanding through reciprocal and cumulative discussion and by reflecting contrasting opinions (Alexander, 2008). Engaging children in educational dialogues increases children's participation (Alexander, 2006) and thus poses a perspective of importance of their points of views for the child. The power of educational dialogue lies within the shared construction of knowledge, which is a process where everyone can take part and through which thinking and reasoning is made more explicit. Educational dialogues also enhance children's reasoning skills and aid them to make justifications for their points of view and striving toward a common goal. Littleton and Mercer (2010) talk about children working *in* the group but not *as* a group, by which they refer to the fact that even if children are set joint tasks, their interaction is rarely productive (e.g., Alexander, 2006; Blatchford & Kutnick, 2003; Galton et al., 1999). Facilitating educational dialogues amongst adults and children can increase true and productive collaboration within a group of children. The daily interactions in early childhood education and care (ECEC) classrooms can provide multiple opportunities for educational dialogues to emerge and facilitate learning through language as part of the daily activities. This study thus shares a concern with making the role of language more explicit and more visible in classroom interaction among young children.

Educators have a significant role in facilitating and maintaining educational dialogues: in order to establish educational dialogues support is needed from educators who are sensitive to children's initiatives, and who use talk to provide continuity and ensure reciprocity (e.g., Myhill, 2006) as children benefit from educator-guided participation to learn from each other (Rogoff, 2008).

According to Gillies (2016) facilitating educational dialogues requires educators to listen attentively to the children's ideas, initiations and questions and challenge and probe children's thinking, while providing them with enough time to respond. Furthermore educators can scaffold children's thinking by encouraging and supporting them to connect prior information to the current topic, and focus their attention on the main points and explicate their thinking and reasoning processes. Similar practices have been emphasized within the Teaching Through Interactions (TTI) framework (Hamre et al., 2013) that conceptualizes high quality adult-child interactions under three domains (i.e., emotional support, classroom organization and instructional support). Particularly, the interactional practices under the domain of instructional support emphasize the importance of high quality verbal exchange and above all educators' support for children's developing language and thinking skills.

Previous research amongst 6-year-old children has suggested a qualitative change in adult-child interaction patterns as they evolve toward dialogue (Rasku-Puttonen et al., 2012). The first pattern suggested educators providing children with opportunities to demonstrate knowledge and competence through Initiation-Response-Follow-up (I-R-F) format. The second pattern indicated educators supporting children's participation and diverse contributions. Adults were responsive to the children's input and encouraged children to tell their ideas and opinions. The third pattern further indicated educators allowing space for child-initiated sharing of ideas. Although the focus was on children's talk, the educator showed her interest and listened and posed questions for clarification. In general, the educator's role in discussion became less directive as the interactions became dialogical. Muhonen et al. (2016) have further identified patterns of adult-initiated and child-initiated dialogues in preschool and in classrooms of early school years. Adult-initiated patterns were characterized by educator-generated strategies that emphasized the adult's active role in maintaining the dialogue. Child-initiated patterns established more balance between adult and children: children shared thoughts actively and the adult's role was more that of a facilitator. These patterns emphasize the different balance between adult and children's talk with different learning goals rather than valuing one pattern over another.

Curriculum and pedagogical practices

Curriculum constitutes activities children are provided with on a day-to-day basis and which are meant to serve particular developmental and educational goals of early childhood education (Slot, 2015). The curriculum as implemented can be considered to be part of process quality as it refers to children's actual experiences with materials and particular knowledge contents that influence the knowledge that child can gain and the skills children can develop (Slot, 2015). Relatedly, an important question is what constitutes a good curriculum for young children. Particularly, the relative importance of play versus a stronger focus on pre-academic skills has been currently under debate (Bennett, 2005; Bodrova, 2008; OECD, 2006). In some countries, the focus in ECEC is increasingly on school readiness skills such as language, literacy, and math in order to decrease the school achievement gap of disadvantaged children. However, according to Slot (2015) recent research points to the importance of play for the development of executive functions and self-regulation skills, which have been shown to be strong predictors of later school achievement, social competence, behavioral adjustment, and learning-related skills in many studies (Berk, Mann, & Ogan, 2006; Diamond & Lee, 2011).

Further, pedagogy relies heavily on the surrounding educational ideologies and planning steered by the curriculum. Although there is number of studies on the process quality of classroom interaction in ECEC, its relation with the pedagogical practices has seldom been studied. Pedagogy relates to how adults are educating children in classroom. According to Siraj-Blatchford et al. (2002) "pedagogy refers to that set of instructional techniques and strategies which enable learning to take place and provide opportunities for the acquisition of knowledge, skills, attitudes and dispositions within a particular social and material context. It refers to the interactive process between educator and learner and to the learning environment." Accordingly pedagogy relate to how adults interact and engage with children to achieve the aims and what directs educators' practices (Wall, Litjens, & Taguma, 2015). Therefore, *how* educators are supporting child development and learning is more important than *what* will be thought (Anders, 2015). Therefore, pedagogical interactions in ECEC have an important effect upon the classroom process quality which further have an impact on child outcomes. For the reasons reported above it is important to study further the process quality and identify high quality pedagogical practices of different curriculum activities in various European ECEC settings.

Culture sensitivity

On a final note, while it is appropriate, on a scientific and political level, to recognize the continuity and size of agreements between different countries and cultures on quality in ECEC, it is as strategic to emphasize the variety of local cultures of children's education and question a rigid universalistic idea of educational standards of quality. The cultural diversity is a resource for the creativity and future of humanity (Rogoff, 2003) and it involves progressive investigation actions and a definition of the historical, environmental and contextual circumstances (Denzin, 1984). Therefore, cross-cultural studies benefit from a qualitative-ethnographic research perspective (Tobin et al.,1989, 2009), involving educators of the individual centres, as key-informants, so that their point of view is taken into account in describing the specific perspective on quality (e.g., curriculum, pedagogy approach, and relationships) embedded in each centre.

As cultural complexity is a cornerstone of this study and also in reference to the evaluation tool implemented, it required a specific methodological reflection in order to enhance the potential wealth of educational-cultural perspectives regarding the concept of quality and good practice (good adult-child relationship, good learning modes, etc.). The CLASS tool is a standardized tool developed to assess classroom process quality in the United States (Pianta, La Paro, & Hamre, 2008). The use of standardized tools designed and validated in one cultural context casts always certain amount of criticism toward its use in research in other cultural contexts. Recent studies (Ishimine, & Tayler, 2014) discuss and argue the problematic validity of instruments applied out of their cultural cradle as they have a cultural matrix which refers to scientific and cultural worlds (e.g., structural characteristics of the settings, curriculum and pedagogical representations, and cultural images of educators and children). It is noteworthy that the standardized tools are an important resource in multicultural studies, but at the same time it is desirable to develop a critical-cultural approach in their use and application, so they do not result as a sort of screen obscuring the meanings that emerge from cultural contexts. A comparative cross-cultural study can be consistent and rich if both (researchers and educators) as insiders and as experts of the educational-cultural contexts share their 'typical' cultural relational dynamics as participants in a cultural community (Rogoff, 2003), so that the different cultural perspectives can be discussed, made explicit and thus enhanced.

Methods in Case Study

The objective for the case study is to identify common and culturally different key-elements of process quality and educational dialogues (e.g., reciprocity, participation of children, sustained shared thinking, and feedback) and to determine the cross-cultural validity of process quality assessment systems by observations of good practices in different European cultural contexts. Task 2.3 involves conducting a multiple case-study of ECEC in 7 European countries (England, Finland, Germany, Italy, Netherlands, Poland, and Portugal), by collecting questionnaire and video-data in four 'good practice' ECEC centers in each country on curriculum implementation, pedagogical approach, process quality and the quality of educational dialogues using structured observation instruments (e.g., the Classroom Assessment Scoring System (CLASS) Toddler by La Paro, Pianta, and Hamre [2012] and CLASS Pre-K instrument by Pianta, La Paro, and Hamre [2008]) and qualitative approaches, to identify good practices, to analyze commonalities and differences across European countries, and to validate classroom quality assessment systems.

Selection criteria for centers

The multiple case study was conducted in a total of 28 ECEC centers (2 classrooms for 0–3 year-old children and 2 classrooms for 3–6 year-old children¹ per country), considered to constitute 'good practices' according to national criteria and/or expert opinion. Therefore, we like to stress that our sample was not representative of ECEC practices or quality of participating countries in any way. However, to ensure comparability between centers participant centers were selected along the following criteria.

(a) Selection criteria for the age range. The multiple case study was conducted in 28 ECEC centers (4 centers per country) serving children between 1–5 years that represented relevant variation in welfare regimes, ECEC systems and cultural values: 2 classrooms with 0–3 year-olds, but focusing mainly on 2- and 3-year old children, and 2 classrooms with 3–6 year-olds, but focusing mainly on 4- and 5- year old children.

(b) Selection criteria for high quality center or group. The centers and groups were selected from among those considered to provide 'good practices' (high process quality) according to national criteria and/or expert opinion (on the basis of "known" quality based on previous studies with standardized quality measures or national inspection system, or on the basis of expert judgment or opinion for example from teacher educators or stakeholders).

(c) Selection criteria for structural characteristics of the center or group. Selection of centers, which were aligned with national guidelines or regulations or close to national average with respect to structural characteristics (e.g., center size, group size, children-to-staff ratio, level of educator's education, educator's work experience, age range of the children, amount of minority children, language, public or private center, full day or half day program). This means that any exceptionally small or untypically well-equipped center was not selected.

¹ Within this study '0–3 classrooms' are throughout used to refer to day-care and toddler classrooms and '3–6 classrooms' to preschool or pre-k classrooms. In some classrooms the age range can be wider.

(d) Selection criteria for educational level or SES of families. Three centers were selected on average to middle SES catchment areas, and one center from an area with typically less affluent parents (e.g., city rental housing).

(e) Selection criteria for type of provision. Different types of provision, such as child day care and preschools, depending on what was representative of the country (in larger countries with differences within the country, selecting at least one center from a different state, selecting both urban and semirural areas). In each country at least one center from a different town than the other three centers was selected. It was also important to include centers with minority or disadvantaged groups (at least one center per country).

(f) Selection criteria for language background. It was important to include at least one center per country with children with different languages or non-native speakers among the children (i.e., variability in ethnic and language backgrounds).

Active informed consent

Active informed consent was used to get research agreement from the local authority, head of the center, educators, and parents whose child participated in video recordings. We also needed permission to use short video clips or audio recordings (written as a script) of good practices to be included in our video library for educators' training and presentation purposes at least from one center per country. However, it did not prove possible to use videos in a video library from all countries. Instead written scripts, for example from classroom dialogues, can be added to the video library as long as children and adults are not possible to recognize. The consent forms were adapted to national and local ethical or legal guidelines in each country. Schools and national teams could have videos at their disposal. However, it was important to note that, unless they had a specific consent from parents and participants, they were not allowed to show the videos to external persons. In some countries a document of the police check was required from the researcher involved in a study which includes visiting children's settings. This type of check is also typically required from educators while applying for a permanent job in day care centers or schools. The check investigates a criminal background of a person who wants to work with children (for example, in England and Finland).

Video recording in the classrooms

To increase comparability across the different countries the same type of activities were observed and video recorded. Although countries can differ in how these activities are carried out and on the role of the educator in these activities (e.g. as an 'active participant' or as a 'distant observer'), the type of activity should be the same. At least one educator was expected to be present in each observation session at the classroom. In addition, we wanted to include different types of activities children participate in on a frequent or daily basis, so that these activities reflect children's ordinary experiences in the classroom. The activities were scored using the CLASS (i.e. process quality of adult-child relationship) and some parts of the activities were analyzed in more detail to identify the *educational dialogue* between educator and children in group/classroom. Educational dialogues were identified from the videos which were made according to the types of activities list.

There were two visits for each classroom during 2-3 hours in the morning. All activities were videotaped (and audio recorded for some cases) for 20 minutes (minimum of 10 minutes), even when the activity had not ended yet (for instance, mealtimes tend to take longer). Before the visit or at the beginning of the visit the global schedule for that morning was discussed with the educator. This schedule helped in deciding *when* and *what* to record and to be on time to observe and video record also the beginning of the day in center (start of classroom routines, i.e. circle time or mealtime, depending on the center).

Type of video recorded activities

Four commonly provided activities were videotaped (and audio recorded if necessary), in each classroom, including play, care routine, educational/emerging academic activities, and creative activities. In addition, each country could choose one other type of activity, which they felt was important or special in their country or in that particular center (e.g., project work, outdoor activity, music, drama etc.). The optional activity was recorded within three out of seven countries.

1. *Play* (adult present at least in the monitoring role for at least 1/3 of the time).
2. *Care routines*, such as mealtime or snack time (adult present in the monitoring role).
3. *Educational/emerging academic activities*, e.g., pre-literacy or pre-numeracy skills during a group activity or circle time (whichever is more appropriate in the country context).
4. *Creative activities*, e.g. craft, music, movement and/or dance.
5. *Optional*: Free choice activity (like project work, outdoor activity, cooking/baking).

It was also possible to videotape more than four activities during the two observation days. This was particularly helpful if researchers were uncertain of which activities to capture and assisted in guaranteeing sufficient amount of videos from each country. In some cases more than four activities was videotaped, and the Core team assisted national teams to choose the four videos to be included in the case study. For instance, it was possible that educational/emerging academic activities took place within another activity. For this reason it was recommended that video recording was done for a longer time than was needed and during more frequent activities.

Also the field notes concerning structural characteristics of the classroom were made at the beginning of each video-recording cycle (and also during the cycle if there were any changes) about the following issues:

1. The number of children in the specific observed (recorded) activity.
2. Number of educators and assistant educators or other adults.
3. Type of activity.
4. Place of camera (Instruction for observer: 'Draw a ground plan of the space in which the activities take place. It will provide a concrete tool for comparing the settings in which ECEC takes place in different countries. Place of the camera can be added to the drawing.')
5. Global schedule of activities during the observation day.

Translation and subtitling of videos

Four videos were selected and translated into English, with subtitles added to the video clips. In case more than four videos were made (for instance two videos of free play), the selection was made before translating and subtitling the video clips. The translation was done very carefully so that it

reflected not only the exact *semantic meaning*, but also the more subtle nuances regarding the *tone* of talking to children. This was particularly important for analysing some of the CLASS dimensions. Therefore, this issue was addressed with each partner by core team when conducting the pilot or the actual data collection. If an additional mp3 player was used to record the audio instead of video recording (for example if the quality of sound was unclear in video the audio tapes need to be used), then the audio of the four selected videos was transcribed and translated. The costs of translating and subtitling the videos were calculated to the budget of every participating country. Thus, each local team was responsible on the translation and subtitling their videos into English. Assistance was provided by the core team when needed. Ideally the videos included as detailed transcriptions as possible. Additional notes on how to make transcripts, translations and subtitles were discussed in Lisbon meeting in April 2015.

The video and audio data were collected and prepared along the aforementioned guidelines (Manuals 1 and 2 were supporting the process) by partners representing the seven countries. The video-recordings were centrally analyzed and scored by using the CLASS tool by Jyväskylä University, Instituto Universitário de Lisboa, and Utrecht University. In addition qualitative culturally-sensitive analysis (Manual 3) was carried out centrally by the University of Milan-Bicocca. Further, examples of educational dialogues were identified centrally by the University of Jyväskylä. At work meetings all partners contributed to interpretation and integration of the findings, identifying commonalities and cultural differences and evaluating the cross-cultural validity of assessment instruments. Data analyses are reported in detail within each Study 1-5.

Questionnaire data

Educators² filled in a questionnaire on the following issues: Classroom characteristics, Job satisfaction, Self-efficacy, Organizational climate, Professional development, Pretend play, Self-regulation, Science activities, Space and materials, Materials and activities, Math activities, and Language and pre-literacy activities. The questionnaire data and analysis will be described in more detail in Study 2.

² There is considerable variation in ECEC staff involved to education and care in ECEC groups/classrooms in each country. Within this study we use 'educator' to refer to ECEC teachers and staff members working in the observed classrooms on a regular basis and while referring to staff members who filled in the questionnaire. Within Study 5 in Table 20, variation in terminology is larger due to describing professional groups of ECEC in different countries through cultural sensitive perspective.

STUDY 1 - The process quality and pedagogical practices

Introduction

The aims of the Study 1 is (a) to gain a deep understanding of the classrooms' process quality focused on educator–child interactions in selected 'good' ECEC classrooms from seven European countries and (b) to find examples of high-quality pedagogical practices from these cases. We examined the emotional, social/organizational, and instructional aspects of children's interactions with educators through the lens of a standardized assessment tool to further understand commonalities and variations across selected good ECEC classrooms in Europe. In addition, we examined process quality across different types of activities (play, educational/emerging academic activities, creative activities, and meals) taking into consideration the organizational and pedagogical context within the activity (namely type of activity, content and group size). Finally, aiming at taking the first steps toward reaching a culturally sensitive understanding of the quality in ECEC systems that will be further pursued in Study 5, we discuss the usefulness of the standardized assessment tool the CLASS used to assess classrooms process quality in the case studies.

Methods in Study 1

Data were gathered in two 0–3-years-old classrooms and in two 3–6-years-old classrooms in each of the participating countries (England, Finland, Germany, Italy, the Netherlands, Poland, and Portugal), in a total of 28 selected good centers (see Methods in Case Study). Table 1 shows the number of participating 0–3-years-old classrooms and 3–6-years-old classrooms in each country. Classrooms were selected based on a specific set of criteria presented in the Introduction. To ensure confidentiality we anonymized the country-specific data and results.

Table 1 Participating classrooms per country and total number of videos

	Classrooms			Videos		
	0-3	3-6	Total	0-3	3-6	Total
England	2	2	4	5 + 5	5 + 5	20
Finland	2	2	4	5 + 5	5 + 5	20
Germany	2	2	4	4 + 4	4 + 4	16
Italy	2	2	4	5 + 5	5 + 5	20
Netherlands	2	2	4	4 + 4	4 + 4	16
Poland	2	2	4	4 + 4	4 + 4	16
Portugal	2	2	4	4 + 4	4 + 4	16
<i>Total</i>	14	14	28	62	62	124

For the 0–3-year-olds classrooms, 13 out of 14 classrooms (93%) included 2-year-olds and had mixed-

age groups. Most classrooms included 2 to 3-year-olds ($n = 8$; 57%), two classrooms included younger children, and two had a higher range of ages, including both younger and older children ($n = 3$). Classrooms had between 8 and 36 children ($M = 18.88$) and 1 to 5 educators ($M = 3.14$). Children-to-staff ratio ranged from 4 to 10.5 ($M = 6.26$). Classrooms that included babies and 1 year-olds usually had smaller groups and lower ratios, compared to 2 to 3-years-old classrooms (See Table 2), reflecting country-specific regulations.

Regarding the 3 to 6-year-olds classrooms, 13 out of 14 classrooms (93%) included 4-year-olds, and 12 (86%) had mixed-aged groups. The age range varied across classrooms. For most of the classrooms ($n = 9$; 64%), the age range was large (3 classrooms with children from 4 to 6 years old, and 2 classrooms with 3 to 5 year-olds), or quite large (2 classrooms with children from 2 to 6 years old and 2 other classrooms with children from 3 to 6 years old). Classrooms had between 10 and 60 children ($M = 26.79$) and 1 to 8 educators ($M = 3.46$). Children-to-staff ratio ranged from 4.77 to 25 ($M = 6.26$). Description regarding educator training and work experience will be provided in the next chapter.

Table 2 Descriptive statistics of the participating classrooms

	0-3 classrooms					3-6 classrooms				
	Age range	<i>n</i>	Group size	Educators	Ratio	Age range	<i>n</i>	Group size	Educators	Ratio
<i>M</i> (<i>SD</i>) Range	0-3	1	20	3	6.67	2-6	2	42.0 (25.46) 24-60	5.5 (3.53) 3-8	7.75 (0.35) 7.5-8
<i>M</i> (<i>SD</i>) Range	1-3	2	13.0 (0) 13-13	2.50 (0.71) 2-3	5.42 (1.53) 4.3-6.5	3-6	2	22.0 (0.0)	3.0 (0.0)	7.33 (0.0)
<i>M</i> (<i>SD</i>) Range	2-3	8	21.5 (10.12) 8-36	3.38 (1.33) 1.50-5	6.76 (2.49) 4-10.5	3-5	2	24.0 (1.41) 23-25	2.5 (0.71) 2-3	10.08 (3.42) 7.7-12.5
<i>M</i> (<i>SD</i>) Range	1-2	1	14	2	7	4-6	3	23.67 (1.15) 23-25	3.0 (2.0) 1-5	18.56 (9.48) 7.67-25
<i>M</i> (<i>SD</i>) Range	0-1	1	13.3	3	4.4	3-4	2	33.0 (9.90) 26-40	5.25 (0.35) 5-5.5	6.38 (2.28) 4.77-8
<i>M</i> (<i>SD</i>) Range	2	1	19	4	4.75	5-6	1	26	2	13
<i>M</i> (<i>SD</i>) Range						4	2	18.0 (11.31) 10-26	2.5 (0.71) 2-3	11.5 (2.12) 10-13
<i>M</i> (<i>SD</i>) Range	Total	14	18.88 (8.31) 8-36	3.14 (1.12) 1.5-5	6.27 (2.06) 4-10.5	Total	14	26.78 (11.31) 10-60	3.46 (1.82) 1-8	11.05 (6.01) 4.77-25

Procedures

Four commonly provided activities were video recorded in each classroom, namely play, care routine (meals), educational/emerging academic activities, and creative activities, across two observation days. A total of 124 videos were produced but only 112 videos (4 per center) were used in the analyses. In order to increase the cross-cultural comparability, a small pilot study involving the core team was conducted first in the Netherlands, which resulted in a set of instructions given and discussed among the WP2 partners, including procedures and technical specifications to conduct video recording, length of the videos, and type of activities. In addition, partners could choose to video record other type of activity, if they felt it was important or relevant for their country or in that

particular center. Three out of seven partners video recorded a fifth activity (see Table 1). Partners were also instructed on how to record field notes (e.g., reporting things happening outside of the scope of the video camera; structural characteristics of the classroom). All the videos (n = 112) were subtitled into English by the national teams, following specific guidelines provided by the core team (Manual 2).

Measures

The Classroom Assessment Scoring System Toddler (CLASS Toddler; La Paro, Hamre, & Pianta, 2012) and The Classroom Assessment Scoring System Pre-K (CLASS Pre-K; Pianta, La Paro, & Hamre, 2008), were used to assess the quality of educator–child interactions in 0-3 classrooms, and 3-6 classrooms, respectively. Below is a description of the measures. A summary of the dimensions of the CLASS-Toddler and CLASS Pre-K is provided in Table 3.

CLASS Toddler instrument

The CLASS Toddler (La Paro, Hamre & Pianta, 2012) includes eight dimensions grouped in two broad domains. The first domain - *Emotional and Behavioral Support* - includes five dimensions: *Positive Climate*, *Negative Climate*, *Teacher Sensitivity*, *Regard for Child Perspectives* and *Behavior Guidance*. *Positive* and *Negative Climate* reflect educator and child expression of emotions (e.g., positive affect, respect, punitive control, sarcasm). *Teacher Sensitivity* refers to the responsiveness and sensitivity of the educator (e.g., educator noticing children needing assistance). *Regard for Child Perspectives* assesses the extent to which children’s perspectives are considered and independence is fostered (e.g., educator’s flexibility, support of autonomy). *Behavior Guidance* captures the use of proactive strategies that help children to meet expectations in the classroom and fully participate in the activities (e.g., clear behavior expectations). The second domain - *Engaged Support for Learning* - consists of three dimensions: *Facilitation of Learning and Development*, *Quality of Feedback* and *Language Modeling*. *Facilitation of Learning and Development* focuses on the ways educators interact with children to support children’s learning and developmental opportunities. *Quality of Feedback* considers the extent to which educators scaffold and expand children’s participation through feedback. *Language Modeling* refers to the use of language-stimulation and language-facilitation techniques that encourage children’s language development (e.g., conversations, open-ended questions, and repetition and extension).

CLASS Pre-K instrument

The CLASS Pre-K (Pianta, La Paro, & Hamre, 2008) consists of three domains of adult-child interactions and involves 10 dimensions. The first domain *Emotional Support* assesses the extent to which educators support social and emotional functioning in the classroom. It includes four dimensions: *Positive Climate*, *Negative Climate*, *Teacher Sensitivity* and *Regard for Child Perspectives*. *Positive* and *Negative Climate* focus on the emotional connection among educators and children (e.g., levels of warmth, respect, and enjoyment displayed). *Teacher Sensitivity* considers educator’s awareness and responsivity to children’s emotional and academic concerns (e.g., educator provides comfort and assistance and is consistently aware of children who need extra support). *Regard for Child Perspectives* refers to the extent to which interactions and activities put an emphasis on children’s interests and points of view (e.g., educator shows flexibility and incorporates children’s ideas,

educator follows child lead). The second domain *Classroom Organization* focuses on the ways educators manage children's behavior, time and attention and help children to develop skills to regulate their own behavior and maintain interest in learning activities. It includes three dimensions: *Behavior Management*, *Productivity* and *Instructional Learning Formats*. *Behavior Management* considers educator's ability to use effective methods to monitor, prevent and redirect behavior (e.g., clear behavior expectations, educator monitors and anticipates problem behaviors). *Productivity* assesses how well educators maximize time spent in learning activities (e.g., brief transitions, children know what is expected of them). *Instructional Learning Formats* refers to the extent to which child engagement and learning opportunities are maximized (e.g., educator is highly engaged, a variety of modalities and hands-on materials are used). The third domain *Instructional Support* focuses on the ways educator support children's language abilities and deep learning. It consists of three dimensions: *Concept Development*, *Quality of Feedback* and *Language Modeling*. *Concept Development* considers the strategies used to promote children's higher order thinking skills and creativity through problem solving and instructional discussions (e.g., problem solving, brainstorming, concepts are connected to the real world). *Quality of Feedback* refers to the degree to which educators' feedback extends children's learning and understanding (e.g., specific feedback, scaffolding, expansion and clarification). *Language Modeling* considers the use of language-stimulation and language-facilitation techniques (e.g., open-ended questions, mapping behavioral actions).

It is important to note that several CLASS dimensions are similar across the 0–3 and 3–6 classrooms, providing a common metric across the age levels. Table 3 shows the CLASS dimensions for the CLASS Toddler and CLASS Pre-K versions. Nevertheless, the ways in which the dimensions are demonstrated in practice are considered to be specific to particular age levels, and some of the dimensions, as well as descriptions of each dimension, are specific to each CLASS version to ensure developmental appropriateness for the particular age range. Therefore, the CLASS provides developmentally sensitive metric of the quality of adult-child interactions (La Paro, Pianta, & Hamre, 2012).

Each CLASS dimension is rated using a 7-point scale, ranging from 1 or 2 (indicating low quality); 3, 4 or 5 (indicating mid-range of quality); and 6 or 7 (indicating high quality). The reverse score is used for the Negative Climate dimension. Each version has a complete scoring manual (LaParo, Pianta, & Hamre, 2012; Pianta, La Paro, & Hamre, 2008) with indicators and examples specific to the age range.

The CLASS has been recently used in several countries, and its validity has been established among most of the participating countries: Finland (Pakarinen et al., 2010), Portugal (Cadima et al., 2016a, 2016b), Netherlands (Slot et al., 2015), and Germany (von Suchodoletz et al., 2014). Therefore, the videos were centrally coded by qualified CLASS observers from three different countries (Finland, Portugal and the Netherlands), following the procedures specified in the CLASS manuals. The three observers were trained by licensed CLASS trainers and have passed certification tests, confirm the official CLASS training protocol.

Table 3 CLASS domains and dimensions of the Toddler and Pre-K versions

	Toddler	Pre-K	
Emotional and Behavioral Support	Positive climate Warmth, enjoyment, and respect displayed by educators and children		Emotional Support
	Negative climate Displays of anger, aggression, and/or harshness (reverse coded)		
	Teacher sensitivity Comfort, encouragement and responsiveness to children's needs		
	Regard for child perspectives Emphasis on children's views and encouragement of independence		
Engaged Support for Learning	Behavior guidance Proactive approaches & supporting positive behavior	Behavior management Effective methods to monitor, prevent and redirect misbehavior	Classroom Organization
		Productivity Maximization of time spent in learning activities	
		Instructional learning formats Maximization of child engagement	
	Facilitation of Learning & Development Facilitation children's learning	Concept development Strategies that encourage critical thinking and creativity	Instructional Support
	Quality of feedback Feedback that extends children's learning and understanding		
	Language modeling Language-stimulation and language-facilitation techniques		

CLASS reliability

To establish interrater reliability on the CLASS ratings, one video per center per country was double coded, in a total of 4 videos per country and 28 videos in total (25%). The videos were independently coded by a pair of two observers. Double-coded videos covered the full range of activities and both types of centers (0-3 and 3-6). The observers had regular skype meetings to discuss the CLASS scores, challenging situations, and to agree on the final scores when the cultural context changed.

For the CLASS Toddler, the interobserver within-1-point percent agreement was 97% on average, ranging from 86% (Quality of Feedback) to 100% (6 dimensions out of 8). Similarly, for the CLASS Pre-K, on average, 94% of the scores were within one scale point, ranging from 86% (Instructional Learning Formats, Concept Development, and Quality of Feedback) to 100% (5 dimensions out of 10), suggesting high levels of agreement between observers. The interrater reliability estimates were also obtained by computing the intraclass correlation coefficients (ICC). For the Toddler version, the ICCs for the eight CLASS dimensions ranged from .61 (Teacher Sensitivity) to .93 (Negative Climate), with an average of .81, suggesting substantial levels of agreement (ICC > .60, Cicchetti et al., 2006). For the Pre-K version, the average interrater reliability estimates for the 10 dimensions was .69 and ranged from .37 (Teacher Sensitivity) to .89 (Regard for Child Perspectives), again suggesting an acceptable degree of interrater consistency in CLASS ratings.

Internal consistency reliability estimates were computed, using Cronbach's coefficient alpha. Cronbach's alphas were .82 and .88, respectively for Emotional and Behavioral Support and Engaged

Support for Learning, of the Toddler version. For the CLASS Pre-K domains, the coefficients were .74, .64, and .89, respectively, for Emotional Support, Classroom Organization, and Instructional Support, suggesting good to excellent internal consistency reliability.

Data analyses

Descriptive statistics were computed both for each classroom, aggregating the scores across the four activities, and for each type of activity. In order to identify patterns of similarities and differences across classrooms and activities, effect sizes were used (specifically, either the standardized difference between two means Cohen’s *d* or the Pearson’s correlation coefficient). Effect sizes facilitate the interpretation of results by providing a standardized measure of the magnitude of observed effect (Cohen, 1992). Effect sizes are not dependent upon the sample size, and they are not based in inferential statistics, but rather on the observed results. Medium and large effects are considered to be meaningful and of substantive and social significance. As such, patterns of results were identified and considered relevant when effect sizes were medium or large.

Results of Study 1

Descriptive statistics of 0–3-years-old classrooms

Descriptive information about the CLASS was aggregated across four cycles of observation, representing different activity types and care routines. Table 4 presents means and standard deviations for the 0-3-years-old classrooms. The distribution of the CLASS Toddler scores (1-7) in each dimension is shown in Figure 1.

Table 4 Means, standard deviations and ranges for CLASS Toddlers scores in the 0–3 classrooms

	Number of classrooms	<i>M</i>	<i>SD</i>	Range
<i>CLASS Toddler Dimensions</i>				
Positive Climate	14	5.80	0.50	5.00-6.75
Negative Climate (recoded)	14	6.64	0.25	6.25-7.00
Teacher Sensitivity	14	5.46	0.52	4.50-6.25
Regard for Children's Perspectives	14	4.93	0.62	4.25-6.50
Behavior Guidance	14	5.68	0.41	4.75-6.25
Facilitation of Learning & Development	14	4.04	0.69	3.00-5.25
Quality of Feedback	14	2.91	0.71	2.00-4.00
Language Modeling	14	3.49	0.67	2.20-4.80
<i>CLASS Toddler Domains</i>				
Emotional and behavioral support	14	5.70	0.37	5.10-6.55
Engaged support for learning	14	3.48	0.62	2.48-4.52
# Adults	14	1.61	0.41	1.00-2.25
# Children	14	7.43	2.54	4.00-11.00

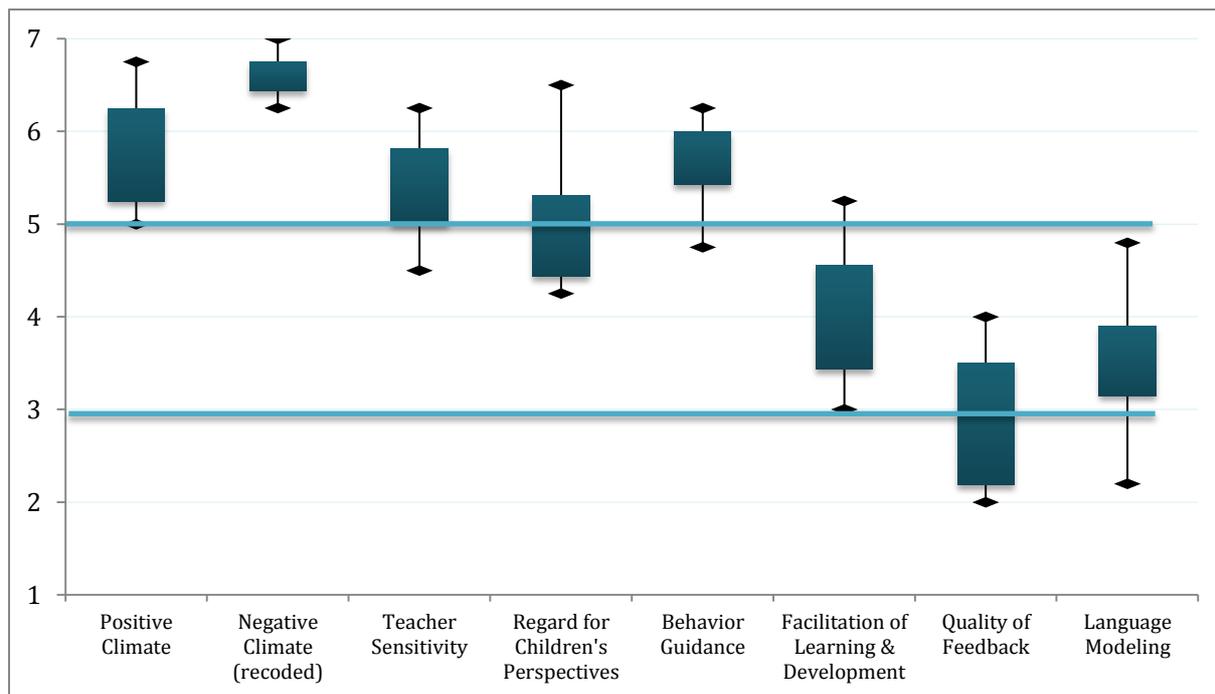


Figure 1 Scores 1-7 distribution ranges for CLASS Toddler dimensions in the 0–3-years-old classrooms (N = 14 classrooms)

Note: blue lines represent the cut points of low, medium, and high levels of quality.

As shown in Table 4, Emotional and behavioral support was high for this group of classrooms. More specifically, classroom quality was in the high range for Positive and Negative Climate (reversed), Teacher Sensitivity, and Behavior Guidance. The interactions between educators and children in the classrooms were characterized by warm and respectful relationships, with strong evidence (e.g., smiling, physical proximity) that educators and children enjoyed being with one another. Overall, educators were aware and responded to children’s individual needs, providing them comfort. The interactions were playful, and in general educators used a set of strategies to support positive behavior and prevent misbehavior.

The range for Regard for Children’s Perspectives was larger compared to the other Emotional and behavioral support dimensions, indicating that there was more variation across classrooms in this dimension. For the Engaged Support for Learning dimensions, Facilitation of Learning and Development was moderate, indicating that educators made some attempts to expand children’s development and learning, by being actively involved with children, playing with them and talking to them, facilitating children’s thinking skills, or supporting children’s active involvement, although not always.

Classroom quality was in the low to moderate range for Quality of Feedback and Language Modeling, suggesting that educators sometimes followed children’s comments and actions, providing additional information that expanded children’s understanding, or by offering encouragement, but other times did not. Across classrooms, there was evidence of some opportunities for conversation and questioning, and sometimes educators extended and elaborated upon children’s language. It is important to note that the range of values also indicates more variation across classrooms for these dimensions than for Emotional and Behavioral Support.

Regarding the number of adults and children, analyses indicated that there was at least one adult who was present in all activities. In video tapes the group of children was relatively small, with an average of seven children, ranging from 4 to 11.

Descriptive statistics in 3–6-years-old classrooms

Means and standard deviations for the 3–6-years old classrooms are displayed in Table 5. Figure 2 shows the distribution of the CLASS Pre-K scores in each dimension.

Table 5 Means, standard deviations and ranges for CLASS Pre-K scores in 3–6-years-old classrooms

	Number of classrooms	<i>M</i>	<i>SD</i>	Range
<i>CLASS Pre-K Dimensions</i>				
Positive Climate	14	6.34	0.43	5.75-7.00
Negative Climate	14	7.00	0.00	7.00-7.00
Teacher Sensitivity	14	6.21	0.66	5.00-7.00
Regard for Children's Perspectives	14	5.97	0.68	4.75-7.00
Behavior Management	14	6.79	0.25	6.33-7.00
Productivity	14	6.42	0.55	5.33-7.00
Instructional and Learning Formats	14	5.74	0.72	4.50-6.75
Concept Development	14	3.23	0.84	2.00-5.25
Quality of Feedback	14	3.51	1.08	2.25-5.25
Language Modeling	14	3.15	0.61	2.25-4.40
<i>CLASS Pre-K Domains</i>				
Emotional Support	14	6.38	.39	5.81-7.00
Classroom Organization	14	6.31	.41	5.67-6.92
Instructional Support	14	3.29	.78	2.42-4.88
# Adults	14	1.30	0.55	0.75-2.50
# Children	14	7.72	2.64	3.50-14.50

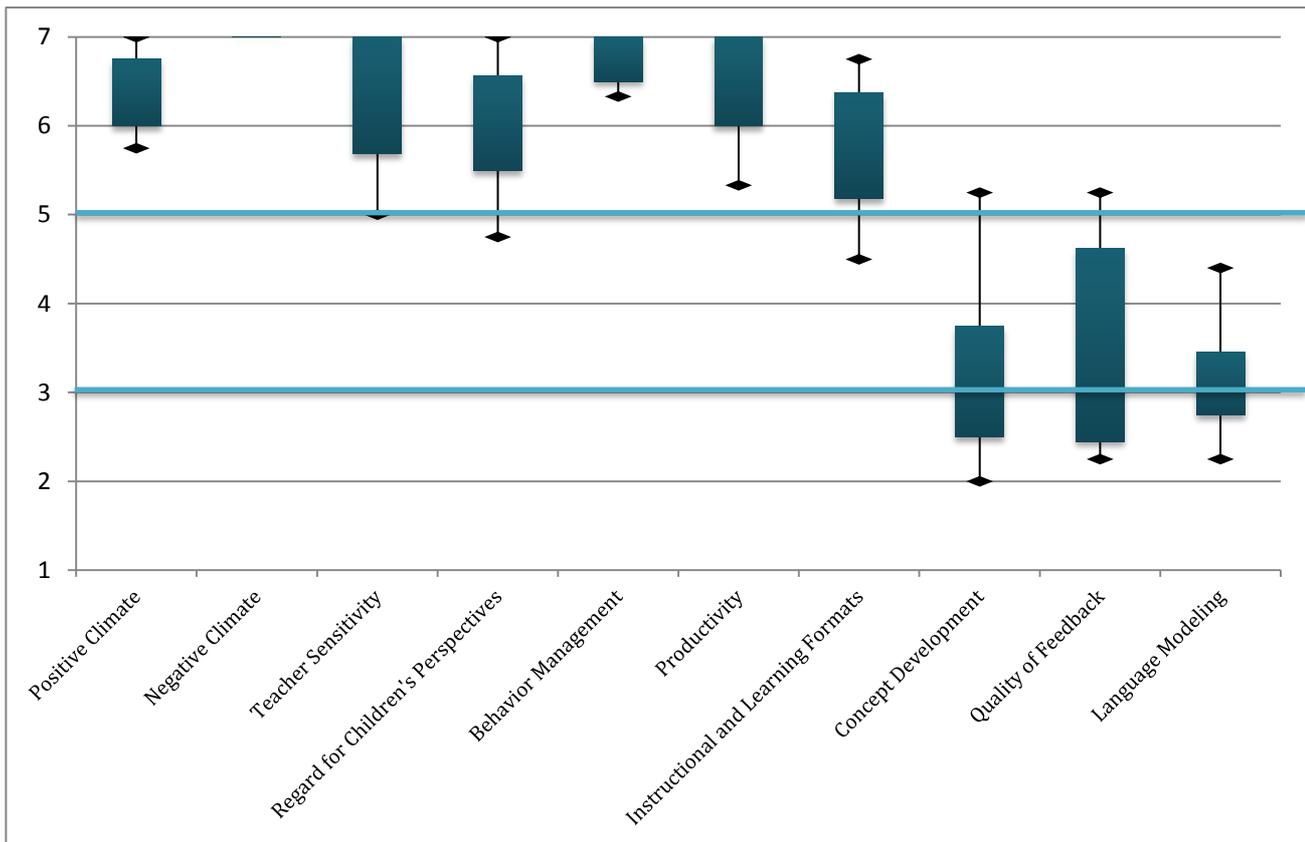


Figure 2 Scores 1-7 distribution ranges for CLASS Pre-K dimensions in the 3–6-years-old classrooms (N = 14 classrooms)
 Note. Blue lines represent the cut points of low, medium, and high levels of quality.

The pattern of results was similar to the 0–3 classrooms, such that the quality of educator–child interactions was high for Emotional Support and Classroom Organization, and moderate for Instructional Support. Specifically, classrooms have higher scores in Positive and Negative Climate (reversed), Teacher Sensitivity, and Regard for Children’s Perspectives. The interactions between educators and children were characterized as warm, supportive, and joyful, with educators consistently providing comfort, reassurance, and encouragement to children. Educators were observed to provide many opportunities for children’s responsibility and autonomy, and to consider and integrate children’s ideas and points of view into the ongoing activities. Classrooms also had very high scores in Behavior Management, Productivity, and Instructional and Learning Formats. The management of children’s time and behavior was such that children were generally well-behaved, knew what was expected from them, and were interested and engaged in the activities.

Classrooms had moderate scores for Concept Development, Quality of Feedback and Language Modeling. On average, there were occasional opportunities for children to be part of discussions that encourage analyses and reasoning, brainstorming and generation of their own ideas and products. Sometimes educators explicitly linked the activities to previous learning and related them to children’s real lives. The type of feedback that educators provided occasionally expanded children’s learning and participation and there were some opportunities for conversations among children and educators, with educators sometimes asking open-ended questions, extending children’s comments, or mapping their own and children’s actions. Similar to the 0–3 classrooms, the range of scores for the Instructional Support dimensions was relatively high, indicating important variation across classrooms for these dimensions.

Process quality across activities

Next, we examine the process quality across the four types of activities (play, educational/emerging academic activities, creative activities, and meals). To enhance our understanding of the observed process quality and interactions, we follow two steps. First, we looked at the commonalities and differences in the CLASS scores across classrooms. Second, we have searched for patterns of associations/tensions among CLASS dimensions, and investigated how organisational and pedagogical contexts, namely ratio and activity content, could contribute to understanding those patterns.

The first part of this section presents common and specific patterns across classrooms and provides examples of high-quality practices. The second part discusses the patterns of associations/tensions among CLASS dimensions and its associations with the specific context of the activities. In the following sections results are presented separately for the 0–3 and 3–6-years old classrooms.

Commonalities and differences in 0–3-years-old classrooms

First, we examined the process quality across the four types of activities, respectively, play, educational/emerging academic activities, creative activities and meals in the 0–3-years old classrooms. Descriptives are provided in Table 6 and Figure 3.

Table 6 Means and standard deviations for CLASS Toddler scores across activities in the 0–3-years-old classrooms (N = 14)

CLASS Toddler Dimensions		Play	Educational/ Emerging academic	Creative	Meal
Positive Climate	<i>M</i> (<i>SD</i>)	5.79 (0.58)	5.86 (0.95)	5.93 (0.83)	5.64 (0.84)
Negative Climate	<i>M</i> (<i>SD</i>)	6.50 (0.65)	6.64 (0.50)	6.71 (0.47)	6.71 (0.47)
Teacher Sensitivity	<i>M</i> (<i>SD</i>)	5.43 (0.51)	5.71 (1.07)	5.36 (0.74)	5.36 (0.93)
Regard for Children's Perspectives	<i>M</i> (<i>SD</i>)	5.71 (0.73)	4.71 (0.99)	5.21 (1.05)	4.07 (1.14)
Behavior Guidance	<i>M</i> (<i>SD</i>)	5.64 (0.50)	5.86 (0.77)	5.71 (0.83)	5.50 (0.76)
Facilitation of Learning and Development	<i>M</i> (<i>SD</i>)	4.21 (0.70)	4.43 (1.09)	3.93 (1.14)	3.57 (1.16)
Quality of Feedback	<i>M</i> (<i>SD</i>)	3.21 (0.80)	3.07 (1.00)	2.71 (1.33)	2.64 (1.55)
Language Modeling	<i>M</i> (<i>SD</i>)	4.07 (1.21)	4.43 (1.09)	3.79 (1.05)	3.64 (1.15)

# Adults	<i>M</i>	1.50	1.50	1.43	2.00
	<i>(SD)</i>	(0.65)	(0.76)	(0.85)	(0.78)
# Children	<i>M</i>	6.79	7.07	6.57	9.29
	<i>(SD)</i>	(3.40)	(4.55)	(3.23)	(4.71)

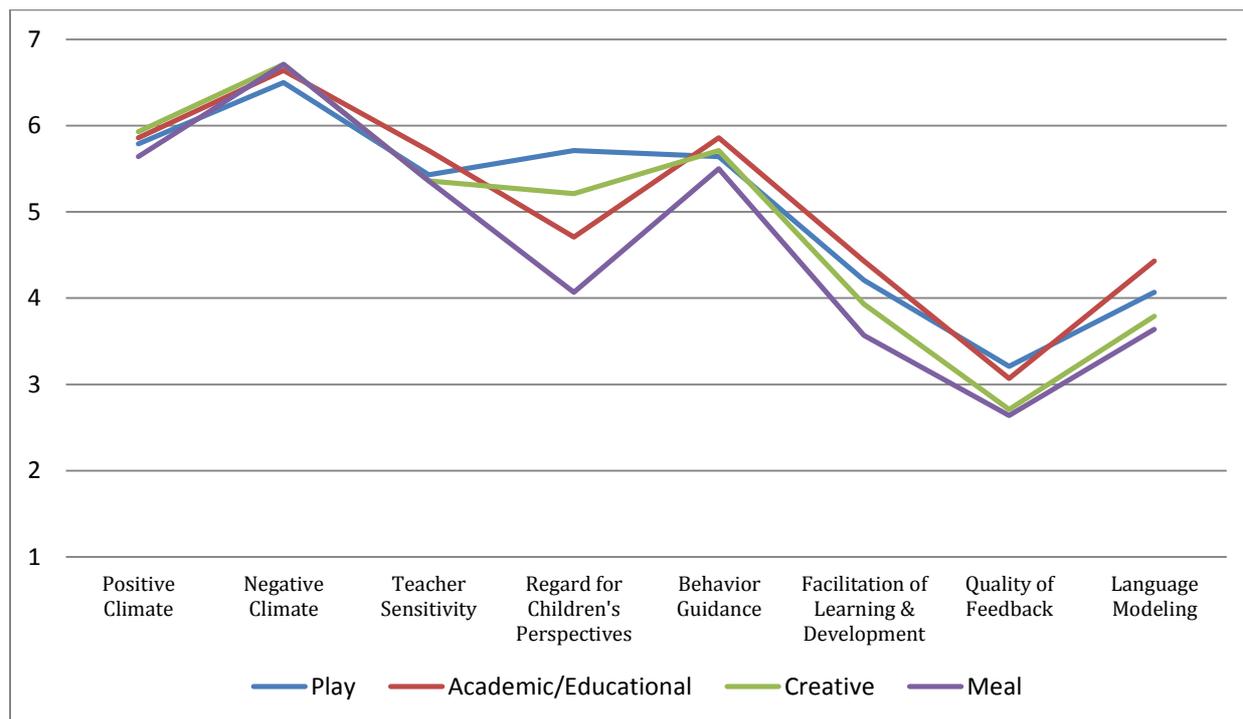


Figure 3 Mean scores of CLASS Toddler dimensions across activities in 0–3-year-old classrooms (N = 14 classrooms)

As shown in both Table 6 and Figure 3, there was variation in process quality across activities especially in the dimensions Regard for Children’s Perspectives and Facilitation of Learning and Development, Quality of Feedback, and Language Modeling. The quality scores were highest in play activities for Regard for Children’s Perspectives, suggesting that in play activities there might be many opportunities to consider children’s interests and points of view, as well as to encourage their independence. The quality scores were highest among activities in both play and educational/emerging academic activities also for the Facilitation of Learning and Development, Quality of Feedback and Language Modeling. In turn, the quality scores were lowest in creativity and meal in Facilitation of Learning and Development, Quality of Feedback, and Language Modeling. Below we provide observed examples of high quality pedagogical practices based on these CLASS Toddler dimensions.

In play activities, concerning the dimension Regard for Children’s Perspectives, children were frequently observed playing freely, with or on what they wish to play, and changing the play or area

when they felt like it. Educators commonly joined children's play, following their lead. For example, in one classroom, a group of children was playing with legos and cars in a small separate room. The educator was sitting on the floor and playing along with children. Educator and children were close to each other, and some children were sitting on the educator's lap. At one time, the educator also tickled one child who was lying on the floor, contributing to a relaxed, warm environment. Throughout the activity, the educator smiled frequently toward children, and children expressed that they felt comfortable interacting with the educator and each other. The educator proved to be highly aware of the children by looking closely at each one and following their lead. Each child was playing with pieces of legos or cars freely, and from time to time, children asked something or showed the educator different toys with the educator responding to these bids of attention every time. Her comments suggested that she was paying close attention to children by asking questions and making comments.

T: It doesn't fit? (a child was trying to put two lego pieces together) Try this smaller one.

T: Can you find it there? (to one child who was looking for a specific piece) Should we look at it more carefully?

The educator seemed genuinely interested in children's perspectives by looking carefully at each child and asking questions

T: What shall we build? What would you like to build?

At one time, when some children started to jump off the bench, the educator noticed their interest and started to look out for opportunities to involve them in a meaningful way:

T: Look at how K is walking on his knees!

T: Now our play turned into gymnastics.

T: A knee-walker!

T: Wow, what a jump!

During the activity, the educator also supported children's autonomy, for instance, by encouraging children to take toys from the cupboard by themselves.

T: Look at the cupboard, they might be there.

Several similar examples were observed during the play activities, with children being free to move in and out of activities, and with educators actively involved in play, and going with the flow of children's interests.

Importantly, regarding the dimensions Facilitation of Learning and Development, Quality of Feedback and Language Modeling, play activities also represented good opportunities for facilitating and extending learning and supporting cognitive and linguistic development. For example, in one classroom, a group of children was building a tower with big blocks with the support of the educator, in the block area. Children were excited to build the tower as tall as they could, and there were often smiles and laughter from children and the educator. The educator followed children's wish to build the tower and facilitated the play by supporting joint work and helping children take turns in placing blocks on top of the tower. The educator was highly engaged with children and shared their enthusiasm. The educator was on her knees in close proximity to children. She was playing and

talking to children, and her questions were guiding children's work, expanding children's understanding of the building process through questioning, and encouraging children's thinking.

T: How can we become taller then?

T: Can you reach there? How can we do that then?

Throughout the activity, in several occasions, the educator guided children's exploration and made suggestions.

T: Shall I hold the tower?

T: What if I stand up? Can I still reach there?

In addition, educator sometimes scaffolded children's understanding, providing information and fostering reasoning.

T: Look how big it (tower) already is. It's bigger than L and taller than K. Oh, it is even taller than E!

Her questions assisted children in pursuing the activity and to reach further in their goals. Educator and children were engaged in conversations constantly.

T: Should I put it on top? Is this the right one?

The educator repeated several times what children were saying and described frequently her and children's actions.

T: Hey, E is looking for a chair. Good idea.

T: Then I just hold the tower.

Thanks to the balance between educator's involvement and children's exploration, there were several opportunities for expanding children's learning during the play activity. **SEE VIDEO LIBRARY**

During educational/emerging academic activities, there were also several examples of intentional opportunities for learning and development with many classrooms scoring medium to high scores in Facilitation of Learning and Development, Quality of Feedback and Language Modeling. For example, in one classroom, 10 children and two educators were observing two snails. The activity began by waking up the big snails in a box by spraying water on them. The educator started to spray water herself and then aided a couple of children to do it themselves. The educator provided occasions for children to explore, to take roles and to have small independent tasks. The snails were arranged at the table where children had a possibility to touch them carefully. The educator and children also fed the snails with fish food plums and cucumber. Most of the children were engaged for extended periods of time and shared both verbal and hands-on experiences with the educator. Throughout the activity, as children actively interacted with the snails, educators built on learning opportunities, encouraging them to learn new things about the snails and adding new perspectives for children to observe.

T: That is a snail shell and that is the snail. The snails shell is where she is protected, nobody can hurt her.

T: They dig themselves to sleep here.

The educator also had some empty snail shells on the table to facilitate comparison for children. At opportune times, educators encouraged children's thinking skills and made real-life connections for

children.

T: The snail? Also so tired. Like you are, right, sometimes you don't want to get up. I'm so tired, I want to sleep.

T: L, do you remember what she ate last time? We had a snail here before. What was her favorite food?

T: Their eyes are on top of the long feelers. Yes, do you also have eyes? Yes? Where are your eyes?

Educators were actively involved, constantly talking about the activity and asking questions or commenting. Children explored the snails' shells and the soft texture of the snails' body. In several moments, educators' answers to children's questions added new information.

T: Well, you can touch it. Well, the snail's shell is hard and in front they are soft.

Y: They feel so slimy. Do you want to feel it? Ah, so smooth. Very slimy... And now they are wet, because we wet them.

T: Do they feel cold? (in response to one child saying cold) Maybe from the water? Yes, we sprayed cold water on them, right?

Throughout the interactions, the language was rich and descriptive, with educators labeling things, and connecting words and actions.

T: There is the snail, you can see her here, right? I think she is coming out. Look!

Opportunities to facilitate learning and development were more mixed across classrooms in creative activities. Noteworthy was that, on average, educators had put an emphasis on children's ideas relatively often, but the opportunities to encourage reasoning and learning were rarer, compared to educational/emerging academic activities. There were nevertheless good examples. In one example, children were making play-dough. Educators were actively involved in making cookies out of the play-dough. Throughout the activity, educators were very well tuned to the needs of the children.

T: T what have you made?

C: A ball.

T: What a nice ball!

Matched affect was established in a humorous manner and children clearly enjoyed the activity.

T: Acrabadabram ta-daa! You will soon see what I've made. Acrabadabra, hocus pocus.

Children were allowed to choose the color of the play-dough and the mold they liked. During the activity, children were actively engaged both verbally and physically.

C: I have made a car!

T: Where has it got its wheels? Show me, turn a little that car.

Educators also followed children's ideas and interests flexibly and commented on children's ideas.

C: I have made myself an ice cream!

T: What is the flavor of this ice-cream?

C: Orange, raspberries, and vanilla.

Educators responded to children's questions nearly all the time.

C: Look what I have made!

T: Wow, it's beautiful. What is it?

C: It is a castle of a princess.

T: And I thought it was a house of Peppa Pig. In which part of the castle the princess lives?

C: Here!

T: In the pink one. And where is the kitchen?

C: Here, and here is the bedroom.

T: It's a beautiful castle.

Educators engaged in discussions with children, asking them many follow-up questions and providing new information.

T: Who can tell me the colour of this play-dough?

C: Red!

T: You know everything!

Activities and organizational and pedagogical contexts in 0–3-years-old classrooms

Play and educational/emerging academic activities: considering child perspectives and facilitating learning and development. As mentioned, it was possible to note that both play and educational/emerging academic activities represented good opportunities to facilitate learning and development. In addition, during play, there were more opportunities to follow children's interests and signals, compared to the educational/emerging academic activities. Interestingly, while in play no pattern of association was found between Regard of Child Perspectives and Engaged Support for Learning, in educational/emerging academic activities, more opportunities to facilitate learning represented also more opportunities to consider children's perspectives. More specifically, in educational/emerging academic activities, educators' greater facilitation of learning was translated into a greater emphasis on children's interests and motivations, through eliciting children's expression, and going with the flow of children's ideas and interests.

For example, in one classroom, three children were invited to explore different drawing techniques and materials with water. A lot of freedom was given for children to choose what they wished to do. Children had access to paintbrushes and droppers to mark different surfaces (e.g., tiles, stones, glasses) and a variety of materials and tools were free for children to use. The educator was very well in tune with children's needs and paid attention to all of the children's initiatives. Children were strongly engaged in the activity. The educator allowed children a lot of freedom to explore how they could draw with water, looking for opportunities to expand children's exploration.

T: What can we do with water today?

The educator was actively engaged, asking a lot of questions and repeating many times children's answers.

T: No more? Yes, the water plays tricks.

T: Look the bubble is... what is happening to the bubble?

C: Away.

T: Oh yes, look!

T: What is the water making? Bubbles, splashes. Shall we try and see where it is going?

For instance, when one child touched the water with her fingers, the educator suggested:

T: Let's feel ... yes, your fingers get wet too... it's wet. Look! Yes, your hand is wet and your hand too. And is it wet here?

At one point, the educator noticed footprints, and explored them together with the children.

T: Look!

C: My shoes.

T: Was your shoes that did it?

T: Where do these feet come from?

(One child starts to step the floor to show footprints)

T: What are these?

Educator used many ways to expand children's understanding.

T: The clay is wet, what is happening?

T: Have you seen this? This water, the way it has become? Do you see? What has it become like?

In this example, the educator was observing and following children's interests, contributing to enrich the experience through using what the children were doing to ask questions and embed information. By considering children's perspectives and encouraging free exploration, the educator built on opportunities to facilitate learning. [SEE VIDEO LIBRARY](#)

In play activities, the match between Regard of Child Perspectives and Engaged Support for Learning was not found. In several classrooms, during play activities, there were lots of opportunities to follow the child's lead, but this was not always translated into more opportunities to facilitate learning. It is important nevertheless of note that, in play activities, there were also several opportunities to facilitate learning and development.

Differences between these two types of activities may reflect educators' views and intentionality during play and educational/emerging academic activities. It is possible that in educational/emerging academic activities, educators are more explicitly looking for opportunities to facilitate learning and development, and that the learning opportunities are better accomplished when the educator is incorporating children's ideas, taking the activity to a new direction or adjusting pace according to children's interests and motivations, and hence making a balance between her involvement and children's active exploration. In play activities it is possible that, across classrooms, most educators are intentionally focused on providing opportunities for children's free and active exploration, but the goal of using play as an opportunity to facilitate learning through educator's support is only pursued in some cases. It seems that a child-centered approach may be a necessary condition, but not sufficient in itself, to facilitate learning. It is possible that combining the regard for child perspectives with educator's intentionality (namely, setting goals) is needed in order to create the best learning opportunities.

Routine (Meals): considering child perspectives and facilitating learning and development. The lowest scores for Regard for Child Perspectives and Engaged Support for Learning dimensions were observed during meals, possibly reflecting distinct views on care routines, and the extent to which routines are considered important learning moments for children. When looking more closely at the videos, it was possible to find two patterns: in some classrooms (n = 4), the interactions were characterized by high levels of quality across all the dimensions, whereas in other classrooms (n = 6), the levels of quality interactions were relatively low across most of the dimensions. Group size and ratio were not related to the two patterns, but children were older (age span 2 to 3-years-old) in classrooms with higher levels of quality.

For instance, in one classroom, involving 18 children and three adults, at lunch time, educators and children were observed having pleasant and friendly interactions at the table. Educators were sitting in close proximity and were interested on children's ideas as children asked both food-related and other questions while eating. Importantly, children were eating independently and they could determine how much they wished to eat. Educators were actively involved while children were eating, asking questions and making comments to which children could attend

T: Is your rice burning still D? That is the secret, when it burns a little bit, you need to stir it.

Educators built on opportunities that encouraged thinking skills and making connections to children's daily experiences. At one point, one child started to count how many meatballs there were on the plate, and the educator asked:

T: In your opinion, are there enough meatballs for all of us?

From time to time, educators engaged children in exchanges that led them to take their experience a step further. For example, the educator said:

T: Have you seen M is trying to eat her rice with a fork? Instead G is using her spoon and fork to eat her rice, aren't you G?

As a response to this initiative, children started to use forks and spoons. Educators also provided new information while eating.

T: Have you seen? There are carrots, just like there were in the vegetable soup we were eating earlier.

T: What's there in the rice? Carrots and zucchini.

Educator provided feedback:

T: You know what we can do? We can stir a bit. May I? There we are, you did it! Very good!

T: But do you know what F? You have done very well anyway.

Educators used advanced language and talked to children throughout the clip. Children were involved in the discussions and provided initiations as well.

T: Let's close the window because there is a bit of draught outside today.

C: Is there draught?

T: Yes, there is a bit of a draught because it's cloudy outside. There are clouds and it might rain.

C: Is it going to rain?

T: Oh dear, yes, perhaps. But it's not a problem for us because we have our umbrellas.

C: Yes, umbrellas.

T: Yes, we have our umbrellas and our (rubber boots).

C: Nice.

T: Yes, it'll be nice after if the sun comes out it's nice afterwards. **SEE VIDEO LIBRARY**

In contrast, in some classrooms, the lunch time rolled along in a routine manner. Educators seemed generally interested in children, but most of the educators' time was used on managerial aspects of lunch, such as serving food, cleaning and aiding children in eating. Even if the educators were actively facilitating lunch, they were not providing clear learning opportunities for children. These examples possibly illustrate different views on care routines, such that in some classrooms, routines are considered as important learning moments, with the educator taking an active and intentional approach to create opportunities for children to think and talk. It is also possible that children's age facilitates educator's intentionality as children show more autonomy, releasing educators' attention to learning opportunities.

Commonalities and differences in 3–6-years-old classrooms

The quality of adult-child interactions across the four types of activities was also examined in 3–6-years-old classrooms. Table 7 provides descriptives and Figure 4 displays mean scores across types of activities in the CLASS dimensions.

Table 7 Means and standard deviations for CLASS Pre-K across activities in the 3–6-years old classrooms (N = 14)

CLASS Pre-K Dimensions		Play	Educational/ Emerging academic	Creative	Meal
Positive Climate	<i>M</i> (<i>SD</i>)	6.14 (0.86)	6.21 (0.58)	6.36 (0.63)	6.75 (0.45)
Negative Climate	<i>M</i> (<i>SD</i>)	7 (0.00)	7 (0.00)	7 (0.00)	7 (0.00)
Teacher Sensitivity	<i>M</i> (<i>SD</i>)	6.00 (1.04)	6.29 (0.73)	6.07 (0.83)	6.67 (0.49)
Regard for Children's Perspectives	<i>M</i> (<i>SD</i>)	6.36 (0.74)	5.43 (1.22)	5.93 (1.00)	6.25 (0.62)
Behavior Management	<i>M</i> (<i>SD</i>)	6.86 (0.36)	6.57 (0.65)	6.93 (0.27)	6.83 (0.39)
Productivity	<i>M</i> (<i>SD</i>)	6.43 (0.65)	6.29 (0.73)	6.50 (1.09)	6.50 (0.67)
Instructional and Learning Formats	<i>M</i> (<i>SD</i>)	5.57 (1.02)	5.86 (1.17)	5.86 (1.10)	5.67 (0.89)
Concept	<i>M</i>	2.79	3.93	3.43	2.67

Development	(SD)	(1.37)	(1.21)	(1.22)	(0.78)
Quality of Feedback	<i>M</i>	3.07	3.93	4.00	2.92
	(SD)	(1.59)	(1.21)	(1.36)	(1.24)
Language Modeling	<i>M</i>	3.15	3.79	3.64	4.50
	(SD)	(1.28)	(0.89)	(1.39)	(0.67)
# Adults	<i>M</i>	0.9	1.4	1.4	1.6
	(SD)	(0.6)	(1.1)	(0.6)	(1.2)
# Children	<i>M</i>	5.1	10.7	6.9	8.3
	(SD)	(5.0)	(6.2)	(4.9)	(4.4)

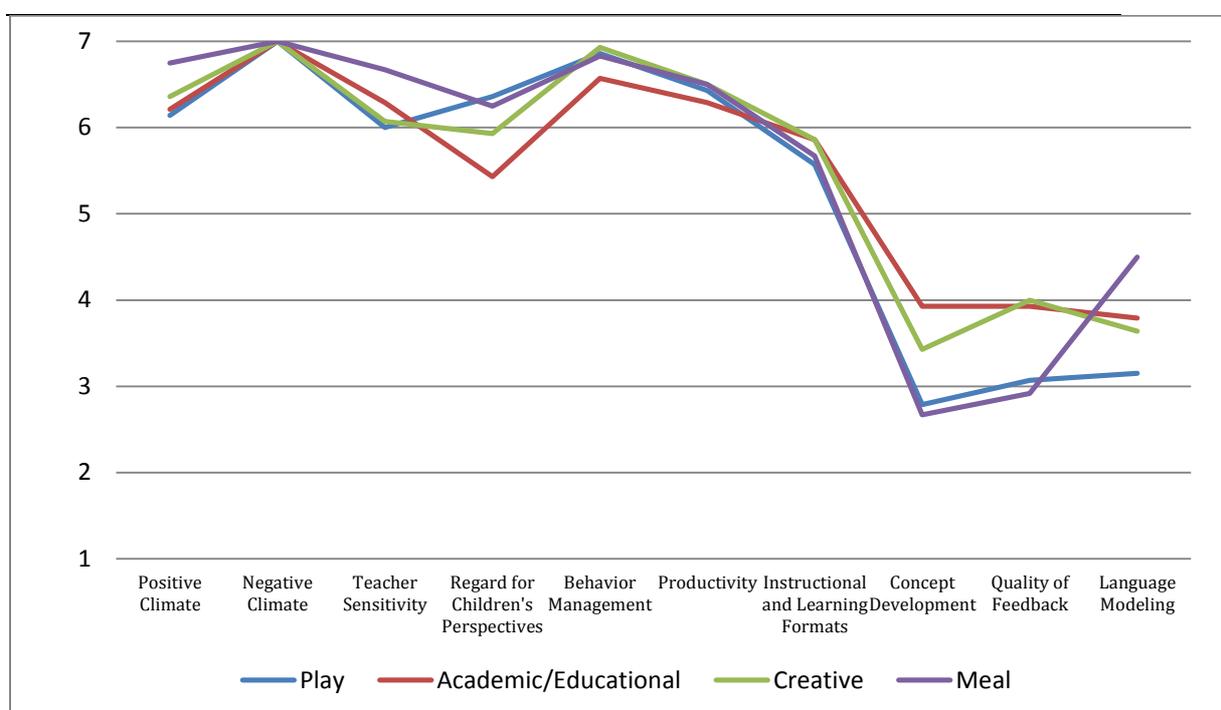


Figure 4 Mean scores in the CLASS Pre-K dimensions across activities 3–6-years-old classrooms (N = 14 classrooms)

As shown in both Table 7 and Figure 4, there was more variation across activities in the Instructional Support dimensions and Regard for Children’s Perspectives. The mean scores in the Instructional Support dimensions were highest in educational/emerging academic activities and creative activities, although the opposite pattern was found for Regard for Children’s Perspectives, with educational/emerging academic activities receiving the lowest scores, when compared to the other types of activities. It is important to note that the quality of Language Modeling was relatively high during meals, suggesting that during meals, there were several opportunities for talk among children and educators.

Similarly to the 0–3 classrooms play activities in 3–6 classrooms were developed based on children’s interests, pace, and signals. For example, in one classroom, children were playing freely in the dressing-up area. Children could dress up anything they wanted and educators were following their lead.

T: As you wish, whatever you like.

T: So change it, go and choose something you like.

Children talked openly with the educators and one another and the classroom climate was very relaxed. Educators sometimes played with children, and most of the time they were paying attention to them, commenting and asking questions.

T: E who are you?

T: Two princesses and one queen!

T: Where are you coming from L?

T: L how are you dressing?

T: Uau, what are you dress for?

Regarding the Instructional Support dimensions, in educational/emerging academic activities there were several instances in which educators facilitated children's broader conceptual understanding of concepts and ideas, and expanded learning and participation. For example, children and educators were walking through the forest. On the way they stopped several times to discuss different types of natural phenomena related to the spring. Throughout the activity, it was noteworthy how the educator helped children to focus on the learning content (observe the season changing, observe birds, flowers, river, changes in the environment) and how she was still very responsive to children's comments related to children's home or family, i.e., not related to the activity. There were several conversations, both initiated by children with the educator asking follow-up questions and responding to children's comments, and initiated by the educator, inviting children to observe, think, and analyze the surrounding. For instance, educators and children stopped near the brook.

T: Let's look, what is the name of the brook?

C: (name of the brook)!

T: (repeats). It has been a while since our last visit, but try to remember, is there more or less water in the brook?

C (several): Less!

T: What could be the reason for having less water now than the last time?

C: Because it hasn't rained.

T: It hasn't rained. The snow has already melted a while ago and this year there was so little snow so there were no floods. It has also been quite a while now that it hasn't rained so the water level is in fact pretty low.

C: So water comes from there.

T: Can we even hear the brook gurgling because there is so little water? Let's listen to it for a moment.

Educators responded to children's comments with follow-up questions that facilitated deeper understanding and promoted further learning and thinking. **SEE VIDEO LIBRARY**

Similarly to educational/emerging academic activities, in creative activities, the scores for Concept Development, Quality of Feedback, and Language Modeling were in the medium range of quality. In

all creative activities, children were actively involved, either in arts and crafts (e.g., drawing, painting, making toys out of waste materials), music or physical games. It is noteworthy that every child was actively involved with hands-on materials or through movement. It was common to observe educators providing a set of materials and a clear goal (even if open-ended) to the activity. In addition, educators always were actively involved in classrooms (except one classroom), there was at least one educator actively engaged with children. The extent to which the activity was open ended varied across classrooms, but in most cases, children could take the activity or idea in their own direction. For example, in one classroom, two educators and six children were involved in creating animal or monster figures out of several materials, such as old newspapers or tape. Each child could decide what she or he would like to do and had the opportunity to make his or her own creation. The children were sitting around a big table with access to many different materials. The educator introduced the activity by explaining to children what they were going to do:

T: We are doing something with sticky tape.

T: Today I want to make figures with you. And you can choose what you want to make. You can make an animal that you like a lot, a monster, a human being, a girl, a boy, what you like. Would you like to do that?

The educator provided examples, asking children follow-up questions to help them think about the process.

T: Then you can take yourselves some newspaper and then you have to think about the body parts you need. If we make a tiger for example, what does a tiger need?

C: A head.

C (all): A body and four legs.

C: And a tail.

Throughout the activity educators listened to children's ideas, engaging in back-and-forth exchanges.

C1: A human being I want to make.

C2: I want to make a lion.

C3: I will try to make a horse.

T: Oh, good.

C4: A monster.

T: A monster? Ok and you?

C6: I, a tiger.

T: A tiger. Ok. And L have you got a favourite animal?

C7: Yes.

T: What is it?

C7: Butterfly.

T: Mhm. Butterfly we can also manage. It will be a little difficult, but we will manage it.

Children had many opportunities to talk to educators and to one another. Educators scaffolded by offering hints, prompting children to think through and encouraging continued participation.

T: Do you think that your leg is stable enough?

T: Ok. What else does a lion have?

In addition, educators consistently gave specific feedback about child work.

T: Come here. I will also explain it to you. If you pull it open a little bit now. So and now you take thumb and forefinger and you make a small tear. Very close. Exactly. Excellent. Very good.

Educators gave children recognition of their efforts quite often.

T: Good. Exactly. Excellent.

By responding to children's efforts and comments throughout the activity, educators motivated children to continue working and to learn in greater depth. In particular, it seemed that the individual involvement with hands-on materials represented good opportunities for feedback, for educators to scaffold and expand on children's learning, understanding and participation.

In sum, a common pattern in the selected case studies from both 0–3 and 3–6 classrooms, was found to be the high levels of quality in the CLASS emotional and behavioral domains. In all classrooms, the climate was warm and organized, and children were observed to be highly engaged in the activities. There was more variation in the opportunities for considering child perspectives and for learning deeply, depending on the type of activity.

When looking across 0–3 and 3–6 classrooms, there was more variation across types of activities in 3–6 classrooms for the instructional domain, suggesting that the type of activity may be particularly important in 3–6 classrooms in what regards the opportunities for deepening knowledge, learning, and understanding. Nevertheless, play activities represented more opportunities to follow child lead across both 0–3 and 3–6 classrooms. It is important to note that opportunities for learning deeply during play were somewhat more evident in 0–3 classrooms compared to 3–6 classrooms. This may reflect educator's ideas about their role during play, but also the nature of learning in 0–3 classrooms, where play and learning may be more easily integrated. It is also important to mention that the interactions during meals showed somewhat different patterns across 0–3 and 3–6 classrooms. In 0–3 classrooms, meals received the lowest scores in many quality dimensions, whereas in 3–6 classrooms, meals appeared to represent an opportunity for children to show autonomy and to talk to one another and with the educators.

Activities and organizational and pedagogical contexts in 3–6-years-old classrooms

Play activities. In play activities, children were frequently observed engaged in pretend play ($n = 10$), in small groups, in different interest areas or learning centers (e.g., house, blocks area). There were some examples of outdoor activities ($n = 2$) with children exploring and playing in different spaces or playing with balls and sliders. Outdoor activities usually involved larger groups of children. Other examples involved a range of small activities within the same video (e.g., exploring maps, making lists of tasks, or playing board games). In all classrooms, children had access to a wide range of interesting open-ended materials, and the physical environment was organized to promote children's self-initiated and active play.

Although children's active participation in play was observed in all classrooms, suggesting a shared vision of children's role in play, it was possible to notice a wider range of different roles from the educator, compared to other types of activities. In several classrooms, educators were actively

involved in play with children (n = 8), but in other cases, educators had a monitoring role (n = 2), or were not present at all (n = 4). It is possible that, for some educators, the play situation is understood as an opportunity for children’s own time and space, to explore their own ideas, play with interesting resources and use their imagination. We examined whether the presence of the educator was associated with the quality of interactions during play. Results are displayed in Figure 5.

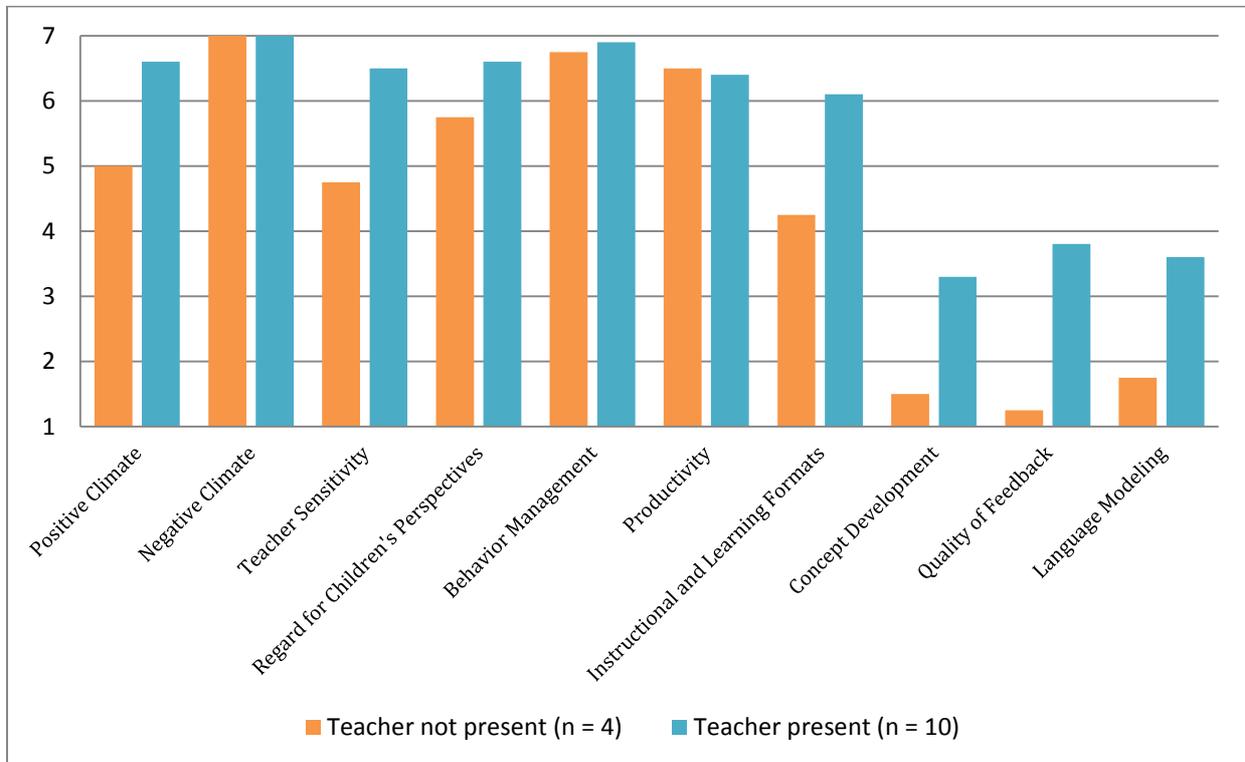


Figure 5 The relation on educator’s presence in Play activities in 3–6-years-old classrooms with CLASS Toddler dimensions

As shown in Figure 5, the presence of the educator (teacher) was associated with the process quality for most of the CLASS Pre-K dimensions, especially in Teacher Sensitivity and Instructional support dimensions (Instructional and Learning Formats, Concept Development, Quality of Feedback, Language Modelling) obviously because adults were overall less involved during play for this age group. In turn, the process quality was higher when the educator was present and interacting with children, responding to them, and expanding their learning. For example, in one classroom, children were involved in roleplay with baby dolls, giving them bath, changing diapers, and putting them to sleep. Children were talking with the educator and the educator was making comments and asking many open-ended questions about their play that encouraged reasoning and supported children to create their own ideas. For example, a child was saying that her baby doll had chickenpox, and the educator said:

T: Oh no! What should we do to make her feeling better?

And later

T: Do you think she needs medicine?

T: How long does it take to get her better?

T: What do you think?

In another classroom, children were playing in the house area and were trying to build a lift for the animals. The educator joined the group and asked many questions to help children to find a solution to build the lift. In a different classroom, one child was interested in a map of his city, and the educator followed his interest and expanded it by showing other maps and asking questions related to the child's actual life about the places he had visited and knew. By taking part in children's play, educators were observed going with the flow of children's play, following their interests, and expanding play either by making questions, offering solutions, posing new problems, or mapping their actions.

However, it is also important to note that, while the presence of the adult seemed important to expand play, there were still several quality dimensions in the high range of quality when the educator was not interacting with children. Noteworthy is that the quality of Classroom Organization dimensions was relatively high, suggesting that, even if the educator was not playing with children, she had set an organized and stimulating environment, enriched with interesting open-ended materials, and had established a set of routines that supported children's active exploration and play.

Educational/emerging academic activities and group format. During educational/emerging academic activities, children were involved quite often in science activities (n = 7), but also in language/literacy (n = 6) and numeracy/math activities (n = 1). In science activities, children were observed making experiments (e.g., volcano experiment, predicting the number of cups needed to fill a bottle), observing flowers using magnifiers and other scientific tools, and using recipes (e.g., making nuttella, slime, or playdough). In other cases, children were involved in shared reading (story books), singing, role play, or name recognition.

Although in many cases it was possible to identify a main content area, it was common to find a mix of content areas approached during the activity (e.g., a recipe in which children needed to read the ingredients, follow a sequence, measure and make predictions). As previously mentioned, educational/emerging academic activities represented a very good opportunity for educators to encourage analyses and reasoning, through questioning, commenting and providing specific feedback.

Noteworthy is that, during educational/emerging academic activities, it was noted that the range of children participating in the activity was higher, compared to other types of activities. The activities were conducted either in small group (less than 8 children; n = 7 classrooms) or with the whole group (ranging from 10 to 25; n = 7 classrooms). Interestingly, group size was not related to the content of the activity, as there was science and literacy activities conducted both in small and large group (see Table 8). We examined whether conducting the educational/emerging academic activity in either small or the whole group could affect the levels of process quality. Results are displayed in Figure 6.

Table 8 Content of the educational/emerging academic activities conducted in small and large groups in 3–6-years-old classrooms

Small group	Ratio	Large group	Ratio
Letters and name recognition	4:1	Book reading and mathematics activity	20:1
Preparing a mathematical guessing game	5:1	Circle time (singing songs)	25:5
Science (outdoors observing nature)	8:2	Science and math (making nutella)	+11:1 ^d
Story singing and scenario (puppet theatre and story)	7:1	Science (measuring cups)	16:1
Science (making slime)	6:1	Science (observing flower parts and sketching)	11:1
Science and Math (making playdough)	7:1	Shared reading and children’s role play	15:1
Science activities (tasting powders and volcano experiment)	6:1	Shared reading (rhymes about different shapes and colours)	10:1

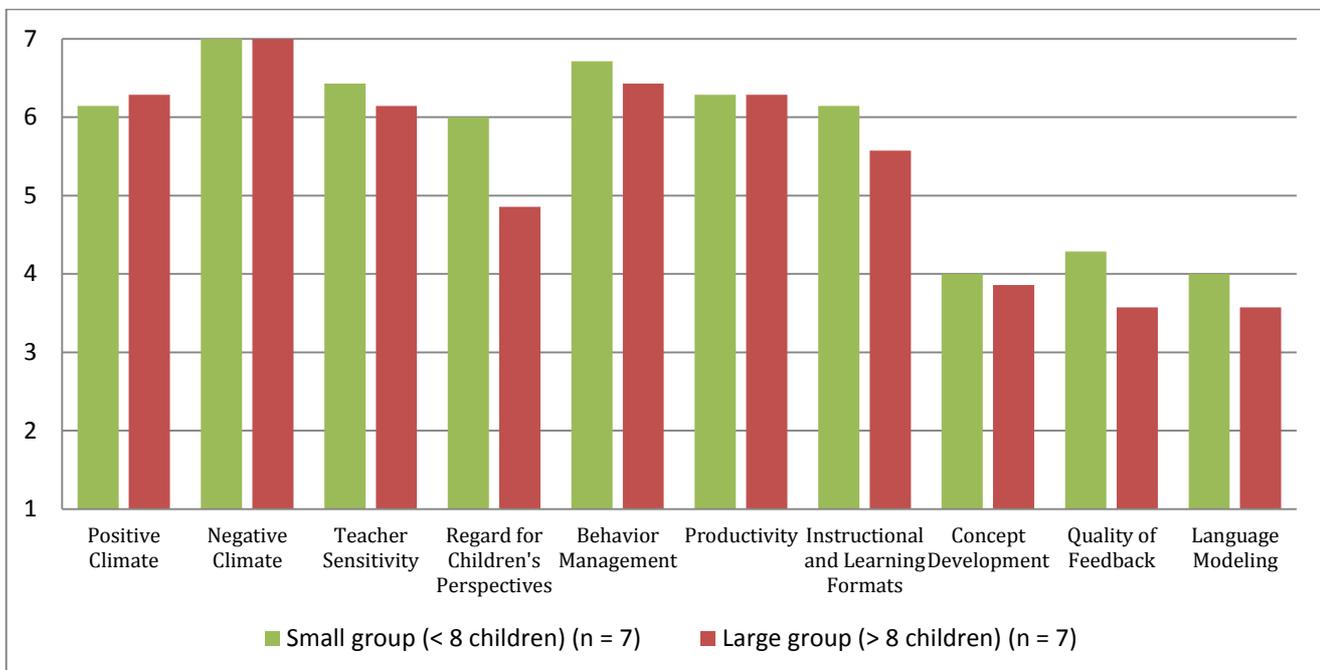


Figure 6 The process quality in CLASS Pre-K dimensions (scale 1-7) in small and large group activities in 3–6-years-old classrooms (N = 14 classrooms)

As shown in Figure 6, there was a trend to find higher quality scores in small group activities than in large group activities, which was especially evident in Regard for Child's Perspectives and Quality of Feedback. In small group activities, opportunities to consider children's points of view and comments and to expand on their learning were more frequent than in the large group activities. For example, in one educational/emerging academic activity with six children and one educator, children were involved in a scientific experiment of making slime. Children had a recipe in which the steps were illustrated and children conducted the experiment by themselves by mixing the ingredients. The educator acted as a facilitator of the activity and strongly encouraged autonomy and leadership. She took a step back and consistently gave the opportunity for children to take the lead.

T: Exactly, we can take a look at the next step.

C (looking at the recipe): Put water into the bowl.

T: Then take a look for what we need now.

In a different moment, one child asked whether she could do anything.

T: Look at the instruction to see what comes next.

C: I want to do it.

T: You want to cut it? It sprays a lot. Try it out.

Throughout the activity, there were several discussions among children, and the educator followed and extended individual comments.

C: My mom also uses it (baking soda).

T: What does she do with it at home? Where do you have it?

Educator followed child comments, bridged the conversation on home experiences with slime to all children. The educator consistently followed up on children's actions, providing assistance and new information.

T: By the way, do you know what this is? What is inside here?

C: Ink.

T: Right. Normally we use it to write and it colours that well so that it doesn't come off your hands very easily.

Children shared their own ideas consistently and remained highly involved throughout the activity.

When working with large groups, it can be more difficult to provide all children with chances to make comments, give specific feedback or answer questions, compared to small groups. In large-group activities, it was common to find fewer opportunities for child expression and educators' incorporation of children's ideas into the content and pace of the activity. Nevertheless, it was possible to observe children actively and enthusiastically participating in the activity. In one example of a large-group activity, children were involved in estimating the number of measuring cups to fill with water bottles of different sizes. Some children were also involved in small tasks, handing the materials to the educator or providing some assistance. The activity was led by the educator, but the educator actively involved children by asking them several open questions.

T: Will it take long before it is filled?

Throughout the activity, there were several instances of why questions, as well as estimating questions, providing opportunities for children to estimate and to say aloud the number of cups they were thinking of, which encouraged analysis and reasoning.

T: How many cups do you think will fit?

T: Why do you think, yes M?

T: How many do you think it will go here?

T: Who thinks that too? What do you think?

T: Do you still think that only one can be added? What do you think?

T: E, do you have an opinion?

Although the educator asked many open-ended questions that foster children's thinking, prolonged conversations were rarer. Still, there were some examples of back-and-forth exchanges.

T: You can look at here?

C: Measure.

T: Yes, that's a measurer (...)

T: And you mean then you won't fill completely, but till certain...

C: ...Number.

T: Number. Possibly. Very good. Very smart, I think.

Possibly because of the large number of children involved in the activity, the activity was largely based on the educator's decisions and choices, and the educator could not always incorporate the ideas, pace, and expressions of all children. Still, the educator seemed to value children's participation and children appeared to be highly interested in the activity. **SEE VIDEO LIBRARY.**

Finally, we looked at the content of the activity. Results are displayed in Figure 7. As shown in Figure 7, differences due to the content of the activity in scores across several Instructional Support dimensions were remarkable, with science and math activities showing higher scores in the Instructional Support domains, namely Concept Development, Quality of Feedback, and Language Modeling. Science and math activities appeared to create more opportunities for educators to encourage children to reach a deeper understanding of concepts, and to focus on the process of learning. Interestingly, science and math activities represented a good opportunity for extended conversations and to stimulate children's language, compared to language and literacy activities.

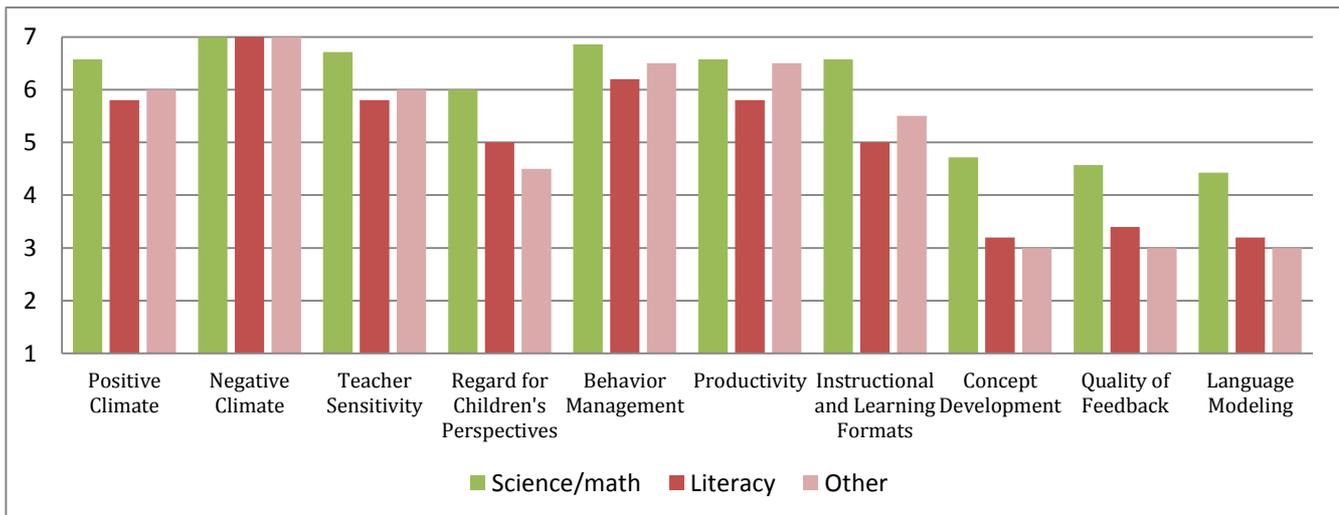


Figure 7 The process quality on CLASS Pre-K dimensions (scale 1-7) in different content activities in 3–6-year-old classrooms (N = 14 classrooms)

In sum, both the type of activity and the learning format (small vs. large group) seem to affect the differences in process quality in 3–6-year old classrooms. Play activities provided a good opportunity for child-led interactions, but the presence of the educator seemed important to expand language and learning. Educational/emerging academic activities appeared to provide more opportunities for stimulating reasoning and for deeper learning, but to some extent fewer opportunities for children’s perspectives and views, especially when conducted in large group format. In 0–3-year old classrooms, both play and educational/emerging academic activities provided good opportunities for educators to facilitate learning and development and the differences across activities were less evident, when compared to 3–6-year-old classrooms. Science activities seemed to capitalize on language and learning opportunities when compared to other content areas.

Summary of the usefulness of the CLASS in the present study

Next, we will discuss on some findings regarding the usefulness and relevance of the CLASS tool in this case study where the cases were selected to constitute ‘good practices’ according to national criteria and/or expert opinion of good ECEC centers in each country. Therefore, we stress that our sample was not representative of ECEC practices or quality of participating countries in any way and accordingly the findings cannot be generalized. A cultural-critical approach to the CLASS tool is provided specifically in Study 5. This approach gave to the core team of researchers a new perspective through which observing those aspects in the teacher-child interactions in different countries that were not captured adequately by the tool.

Overall, results from this case study suggest that the CLASS is a useful tool to examine the process quality in ECEC settings across European countries and across activities. Moreover, the CLASS was powerful in capturing potential commonalities and differences in group and classroom processes across different age groups in early childhood education contexts. Accordingly it captured relevant aspects of adult-child interactions across classrooms and countries. For example, there was strong evidence of enjoyable, warm, and respectful interactions, responsive educators who were attuned and aware of children’s interests and needs, within an organized and supportive environment for children’s engagement in activities. Additionally, the CLASS tool was useful in detecting differences

across activities and settings, namely the extent to which an emphasis is given to child lead, and the extent to which activities foster deep learning and thinking skills. The variation across classrooms was related to children's age range, format of the activity (small vs. large group), and type and content of activities, but the CLASS dimensions could also represent different views on the role of play and the importance of routines in ECEC classrooms.

However, it is important to mention that, as the core team of researchers proceeded with observations and skype discussions and reached high agreement with their ratings, it was evident that the CLASS did not capture all aspects of adult-child interactions that seemed to be important to understand the quality of the learning process, as highlighted by Study 5 (see also Pastori, Pagani, Mantovani, 2015; Pastori, Pagani, submitted). First, in the CLASS tool learning opportunities appeared to be strongly connected to cognitive and language development. In several moments in the video clips educators were intentional in extending and supporting opportunities for children to learn socio-emotional skills that went well beyond providing an overall positive climate; these were not adequately captured in the Instructional Support domains of the CLASS. Throughout the videos, it was possible to observe educators supporting children's socio-emotional skills, such as self-regulation, sense of rhythm, and also peer-to-peer interactions, such as learning to cooperate with each other, to help each other out, to recognize other's feelings and ideas. For example, in many instances, educators were observed to encourage children to help or to ask for help from another child, and children seemed to learn for each other as well.

Second, it was possible to notice that some of the CLASS dimensions relied more on the overall climate (e.g., Positive Climate, Behavior Guidance) based on a set of strategies and actions implemented on a daily basis, whereas other dimensions relied exclusively on what the educator was actually doing during the observation (e.g., Quality of Feedback). There also appeared to be a misalignment between some dimensions which focused on the actual behaviors of the educator (e.g., content of educator's questioning), while some other dimensions were more dependent on child-focused indicators (e.g., the extent to which children smile, show positive interactions with others, know what it is expected from them). In this sense the focus between the dimensions were not always in balance.

Finally, some CLASS dimensions does not make distinction between climate vs. overall group interactions and dyadic interactions, and some dimensions focused on the overall interactions between the educator and children while others were more focused on a specific adult-child interaction with one child. Nevertheless, we found the usefulness of the CLASS tool in this research to be remarkable, contributing to an in-depth understanding of the process quality of adult-child interactions in ECEC classrooms across European countries.

STUDY 2 – The curriculum activities and process quality

The aim of Study 2 was to gain information on the curriculum activities provided in European ECEC centers, how these might differ depending on the age of children and what the relations are with observed process quality according to the CLASS.

Method in Study 2

In each of the participating countries, data was collected in two 0–3-years old classrooms (total of 14 classrooms) and in two 3–6-years old classrooms (total of 14 classrooms) resulting in a total of 28 selected centers. The cases were selected to constitute ‘good practice’ according to national criteria and/or expert opinion of good ECEC centers in each country. To ensure confidentiality we anonymized the country-specific data and results.

Participating educators of all classrooms were given a questionnaire with questions on their professional background, classroom characteristics (which will be reported in Study 3), and the provision of different types of curriculum activities. For each classroom, one or more educators returned the questionnaire, resulting in a total sample size of 77 educators (N = 41 for 0-3 classrooms; N = 36 for 3-6 classrooms). Not all educators filled out all questions resulting in missing data on subscales. See Table 9 for the number of educators per center and per country.

Table 9 Number of participating educators of each ECEC center within each country

	0–3-year old classrooms			3–6-year old classrooms		
	Center 1	Center 2	Total	Center 1	Center 2	Total
Country A	1	4	5	5	5	10
Country B	2	3	5	3	5	8
Country C	3	3	6	3	2	5
Country D	5	3	8	2	2	4
Country E	2	2	4	1	1	2
Country F	4	4	8	2	3	5
Country G	2	3	5	1	1	2

The different curriculum activity scales (language, literacy, math, science) and scales on pretend play and self-regulation were used in the current study based on an existing educator questionnaire used in the longitudinal Dutch cohort study pre-COOL (Slot, Leseman, Mulder, & Verhagen, 2015) and were slightly adapted for the current purposes. The internal consistency was investigated for all countries and both age ranges separately. All scales proved to be sufficiently reliable and the Cronbach’s alpha across countries is provided between brackets. Answers on all scales were rated on a 7-point scale, ranging from 1 (*never*), 2 (*less than twice a month*), 3 (*twice or thrice a month*), 4 (*weekly*), 5 (*two to four times a week*), 6 (*daily*), and 7 (*three or more times a day*). Below is a description of the curriculum activity scales used.

Pretend play (7 items, $\alpha = .97$ across countries) represents the degree to which the educator encourages cognitive distancing, symbolizing and pretend play in children by modelling behaviour and encouraging children to participate in symbolic and pretend play. An example of an item is: “I

show children how to use an object for something else than intended, for instance driving a wooden block *as if* it is a car”.

Self-regulation (11 items, $\alpha = .88$ across countries) evaluates the extent to which the educator uses routines, activities and play to stimulate children’s behavioural self-regulation, such as talking about emotions and feelings, supporting them in resolving peer conflicts or playing games involving turn taking. An example of an item is: “When children have a conflict I let them express their own opinion so they better understand what the other thinks”.

Language activities (11 items, $\alpha = .92$ across countries) measures the average frequency of different language activities such as, singing songs, rhyming, having classroom conversations, and vocabulary instruction. An example of an item is “Having elaborate conversations about children’s personal experiences, for instance what they did in the weekend”.

Literacy activities (6 items, $\alpha = .84$ across countries) assesses the average frequency of the provision of activities involving literacy or literacy materials. An example of an item is: “Asking the children questions about the content of the story during or after reading the story”.

Math activities (12 items, $\alpha = .96$ across countries) represents the average frequency of different number and math activities, for instance counting and sorting activities, and activities exploring different shapes. An example of an item is: “Counting how many objects you have, for example counting till five and saying ‘I have five marbles’”.

Science activities (7 items, $\alpha = .91$ across countries) assesses the degree to which educators use activities, conversations, and play related to science. An example of an item is: “Comparing and discussing different seeds and pits (for instance, that a flower, fruit or tree grows out of this.”

Results

Curriculum activities in 0-3 and 3-6 years-old classrooms

Figure 8 shows the mean scores and the range of scores for all curriculum activities and children’s behavioural scales for 0-3 and 3-6 year-old classrooms separately. The results show quite some variation and slightly different patterns for the 0-3 and the 3-6 classrooms. Language activities and self-regulation and provision of pretend play were the most frequently reported activities by educators of younger children, although the variation was quite large. The educators from 3-6 years-old classrooms reported providing more academically oriented curriculum activities, including literacy and math activities, although there was substantial variation as well. Science activities, generally, occurred much less, but more in provisions for older children than in provisions for younger children.

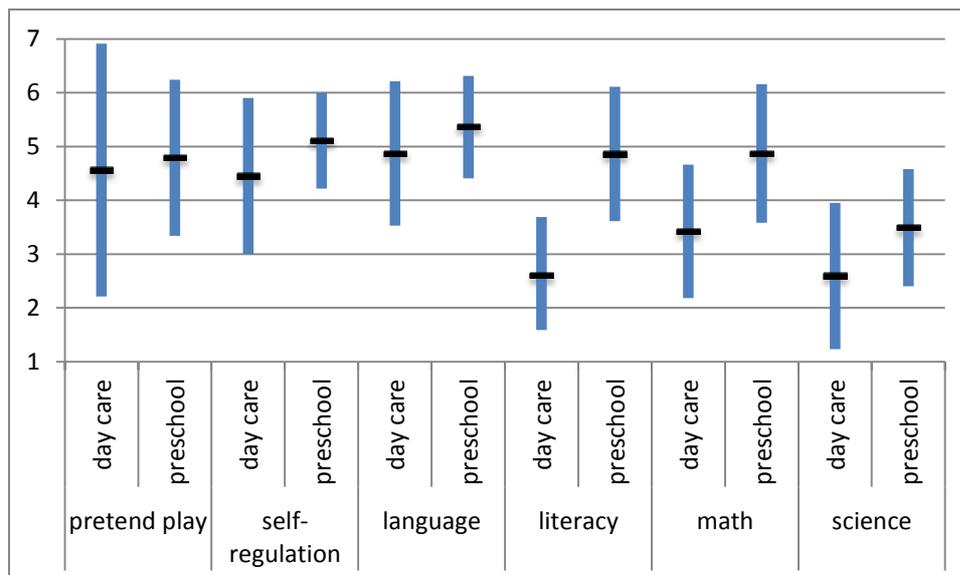


Figure 8 Mean and range (+1 and -1 standard deviation above and below the mean score) of the educator reported curriculum activities for 0-3 (N = 41 educators) and 3-6 year-old classrooms (N = 36 educators)

Figure 8 shows quite a lot of variation, particularly for the classrooms for younger children. Therefore, the data were further explored to investigate whether there appear to be differences in patterns for the seven countries that may represent different pedagogical traditions and curricula. Although the educator reports cannot be interpreted as being representative for the practices in these countries, they do illustrate the emphasis the educators from the selected centers (considered ‘good practices’ in these countries) place on different types of activities.

Differences in curricular focus between countries

Although the sample from each country was selective, some country specific patterns in curriculum activities can be identified. Figure 9 and Figure 10 show the patterns of the different curriculum activities provided in the different countries in centers for 0-3-years-old and 3-6-years-old, respectively. For the younger children pretend play was the dominant activity as reported by the educators from the centers in country B, while particularly pre-academic activities were less frequent. Educators from the countries D and G reported providing language activities and self-regulation most frequently compared to other types of activities. The educators from the countries E and F reported a mix of support of pretend play and the provision of self-regulation and pre-academic activities, in particular language and math, but less literacy and science activities. Finally, educators from countries A and C reported a mix of activities as well, including relatively frequent literacy and science activities, thus covering a more complete pre-academic curriculum.

The patterns for the 3-6-years-old are different from those for the younger children. Overall, educators of the older children reported to provide more curriculum activities of any kind than educators of younger children reported to do. Moreover, the patterns are more similar between the centers from different countries. The general pattern of a shift towards the provision of more pre-academic activities for older children is apparent in the centers from most countries. The provision of science activities remains less frequent in most centers, except for the centers in countries A and F. The educators from country G report to provide pretend play less frequently compared to the other countries.

Overall, the findings illustrate differences in emphasis within the provided curriculum in centers from different countries. The focus for younger children seems to be on (pretend) play, language and self-regulation, whereas the focus for older children is more on academically oriented activities with more variation between countries in the emphasis on (pretend) play.

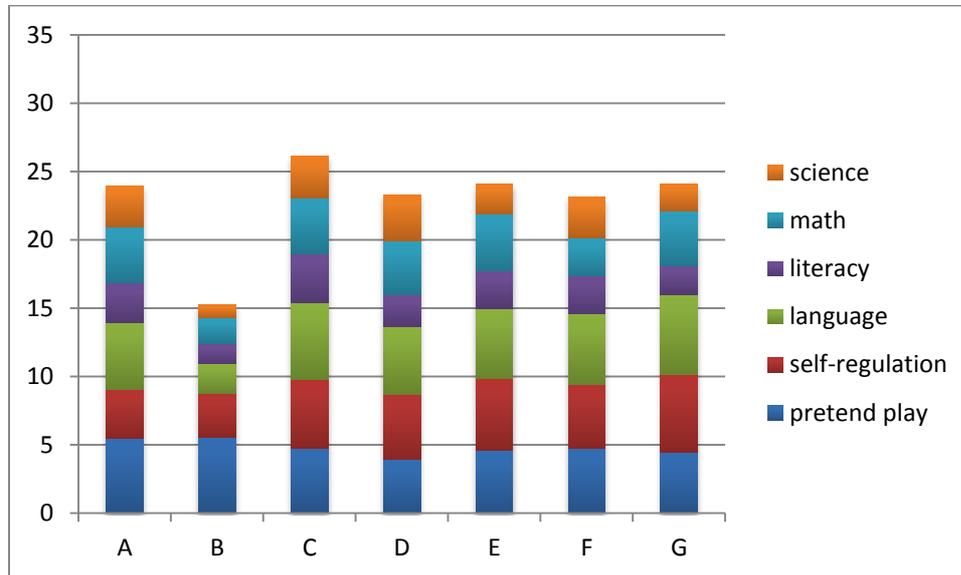


Figure 9 Patterns of the proportion of the provision of activities for 0-3 year old classrooms in different countries based on educator reports (N = 41 educators)

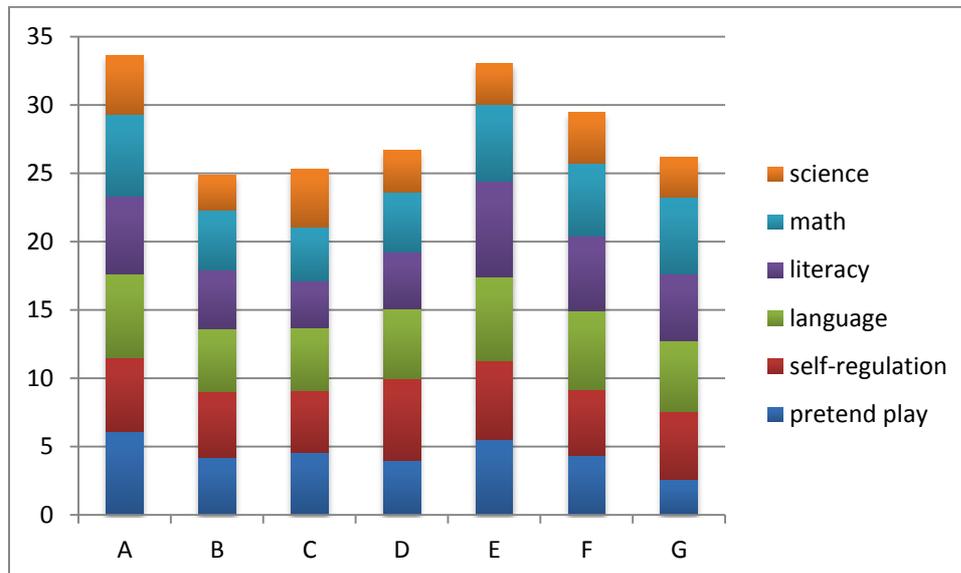


Figure 10 Patterns of the proportion of the provision of activities in 3-6 year olds classrooms in different countries based on educator reports (N = 36 educators)

Relations between curriculum and process quality

To enhance our understanding of how differences in emphasis within the curriculum of provided activities are related to the observed classroom quality assessed by the CLASS, we looked at different typologies of classrooms based on the focus of the curriculum. First, we distinguished three different types of activities: *play* (mean score based on the pretend play scale of all educators in the classroom), *self-regulation* (mean score based on the self-regulation scale of all educators in the

classroom), and *pre-academics* (mean score based on the language, math, literacy and science scales). Based on these three activities we investigated different patterns of combinations: (a) play and pre-academics; (b) self-regulation and pre-academics; and (c) self-regulation and play. Differences in types and how these are related to observed process quality are only interpreted in case of (close to) medium sized effects or larger in terms of Cohen's *d* (based on the differences in means for the types and the normative standard deviation of .85; a normative standard deviation, being a rough average based on a number of studies in large, representative samples rather than the currently observed sd was used because of the selection of good practices, which is likely to reduce the sd and to exaggerate Cohen's *d*).

Centers for 0-3-years-old

First, for the combination of (a) play and pre-academics, four different types of centers were distinguished for the 0-3-years-old. The first type of centers can be defined by a comparatively low score on the provision of play scale (< 4.83) and a similar low score on the combined provision of pre-academic activities scale (< 3.34) (this concerns $n = 5$ classrooms). The second type of centers was characterized by low scores on the provision of pretend play scale (< 4.83), but by comparatively high scores on the scale measuring the provision of pre-academics in the classroom (> 3.35) ($n = 2$ classrooms). The third type of centers was marked as having relatively high scores on pretend play (> 4.84) and low scores on pre-academics (< 3.34) ($n = 2$ classrooms). Finally, the fourth type of centers was reported to provide a relatively high frequency of pretend play (> 4.84) and also a relatively high frequency of pre-academic activities (> 3.35) ($n = 5$ classrooms).

Next, we related this fourfold typology of centers to observed process quality in classrooms. The results (see Figure 11) showed that the combined high level of provision of play and pre-academic activities was related to the highest observed Emotional support and Support for learning, while a high focus at play together with lower focus on pre-academics was related to the lowest observed Support for learning in 0-3-years-old classrooms. Interestingly, the differences between the type 1 and 4, both representing a balance of play and pre-academics either at a low frequency level or at a high frequency level, were small suggesting that a roughly equal focus on play and pre-academics is more favourable compared to emphasizing the one over the other. Note that the difference in Support for learning between type 2 and type 4 amounts to $d = .26$ (weak effect) and between type 3 and 4 to $d = .73$ (strong effect; both based on the normative standard deviation of .85). The differences in Emotional support are negligible.

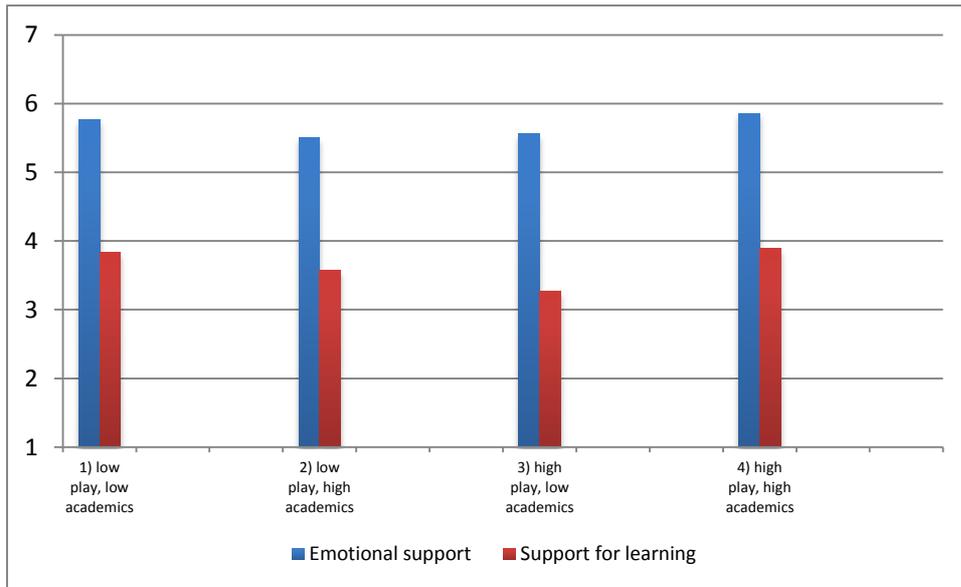


Figure 11 The process quality (CLASS Toddler domains) in four types of the provision of play (below or above the mean) and academic activities (below or above the mean) in 0-3-years-old classrooms

Second, for the combination of (b) self-regulation and pre-academics, four types of centers were distinguished for the 0-3-years-old. The first type was characterized by a comparatively low score on the support of self-regulation scale (< 4.59) and a low score on the provision of pre-academic activities scale (< 3.34) ($n = 4$ classrooms). The second type showed a relatively low provision of self-regulation support (< 4.59), but a higher provision of pre-academics (> 3.34) in the classroom ($n = 2$ classrooms). The third type was marked by higher scores on self-regulation (> 4.60) and lower scores on pre-academics (< 3.34) ($n = 3$ classrooms). Finally, the fourth type reported a higher frequency of self-regulation (> 4.60) and also a higher frequency of pre-academic activities (> 3.35) ($n = 5$ classrooms).

Again, we related this fourfold typology of centers to observed process quality in classrooms. The results (see Figure 12) showed that the combination of relatively high provision of self-regulation support and pre-academic activities was related to slightly higher observed Emotional support and Support for learning, whereas a high focus on pre-academics together with low emphasis on self-regulation was associated with slightly lower process quality, but the differences were very small.

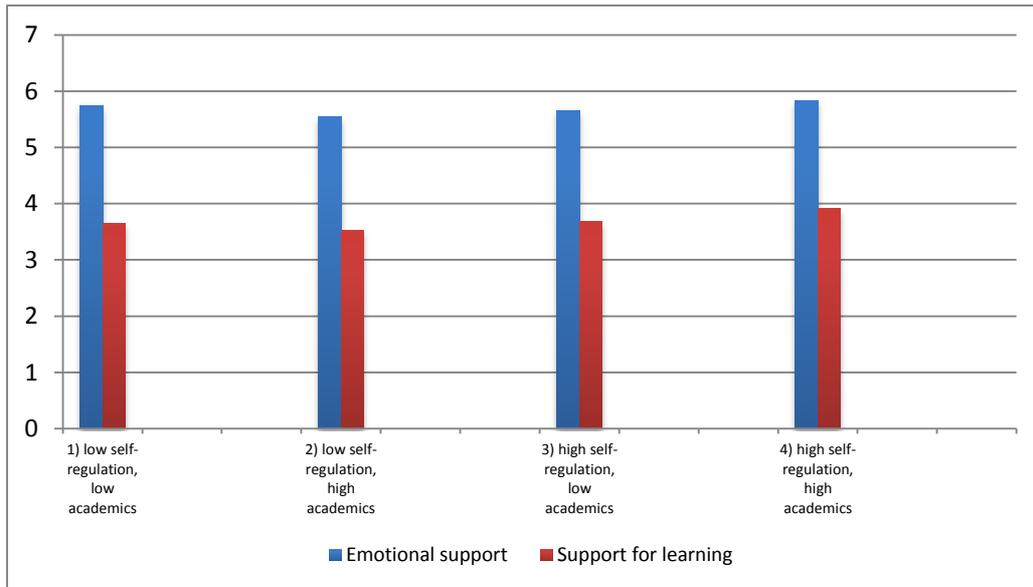


Figure 12 The process quality (CLASS Toddler domains) in four types of the provision of self-regulation (below or above the mean) and academic activities (below or above the mean) in 0-3-years-old classrooms

Finally, for the combination of (c) self-regulation and play, four different types of centers were distinguished for the 0-3-years-olds. The first type can be defined as low on the provision of self-regulation (< 4.59) and low scores on play (< 4.83) ($n = 3$ classrooms). The second type was characterized by a low provision of self-regulation (< 4.59), but relatively high provision of play in the classroom (> 4.84) ($n = 3$ classrooms). The third type showed higher scores on the scale of self-regulation (> 4.60) and lower scores on play (< 4.83) ($n = 4$ classrooms). Finally, the fourth type had relatively high scores on the play (> 4.60) and also a relatively high score on self-regulation (> 3.35) ($n = 4$ classrooms).

The results (see Figure 13) showed that a balance of self-regulation and play (both in the low and high range) was related to the highest observed Emotional support and Support for learning in 0-3-years-old classroom. Moreover, the observed emotional and educational quality was highest in classrooms with a combined provision of frequent self-regulation activities along with a stronger emphasis on pretend play (type 4), compared to an emphasis on either self-regulation activities or the provision of pretend play (types 2 and 3). The difference between type 2 and type 4 amount to $d = .35$ for Emotional support (weak effect) and $d = .45$ (medium strong effect; both based on the normative standard deviation).

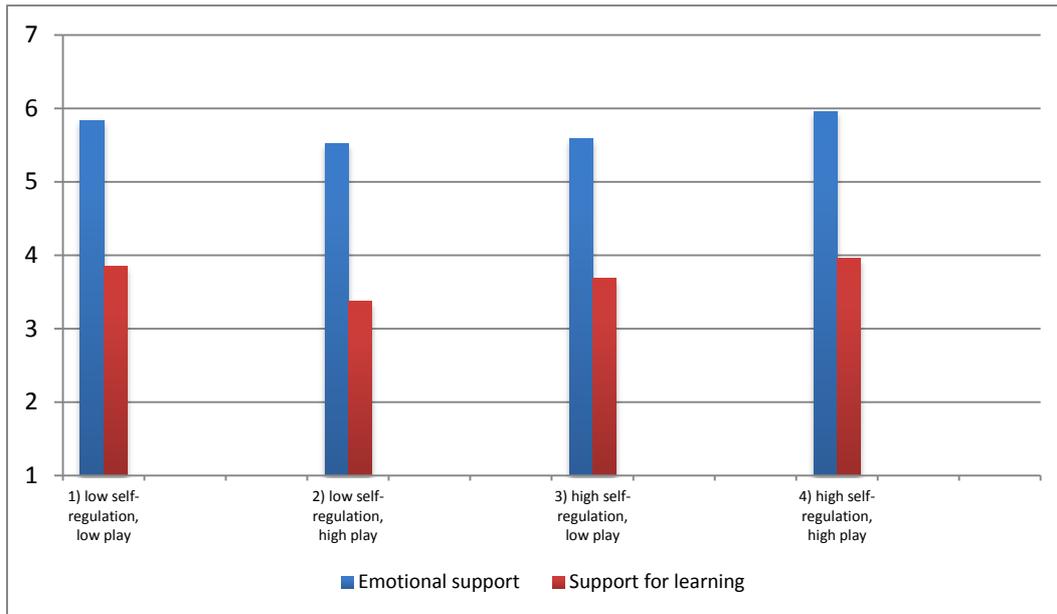


Figure 13 The process quality (CLASS Toddler domains) in four types of the provision of self-regulation (below or above the mean) and play (below or above the mean) in 0-3-years-old classrooms

Centers for 3-6-years-old

First, for the combination of (a) play and pre-academics, four different types of centers were distinguished for the 3-6-years-old. The first type was characterized by a low score on play (< 4.59) and a low score on the provision of pre-academic activities (< 4.54) (n = 3 classrooms). The second type of centers was marked by low scores on the provision of play (< 4.59), but by comparatively higher scores on the provision of pre-academics (> 4.55) in the classroom (n = 4 classrooms). The third type of centers was defined by higher scores on the provision of pretend play (> 4.60) and lower scores on pre-academics (< 4.54)(n = 2 classrooms). Finally, the fourth type of centers was reported to provide a relatively high frequency of play (> 4.60) and also a relatively high frequency of pre-academic activities (> 4.55) (n = 5 classrooms).

Next, we related this fourfold typology of centers to observed process quality. The results (see Figure 14) showed first that all types of classroom were roughly at equally high levels regarding Emotional support and Classroom organization. Regarding Instructional support, the scores differed more and were highest in classrooms combining a stronger focus on pre-academic activities with less emphasis on play (type 2). The difference between type 2 and type 3 (with opposite emphases) amounts to $d = .80$ (strong effect; based on the normative standard deviation).

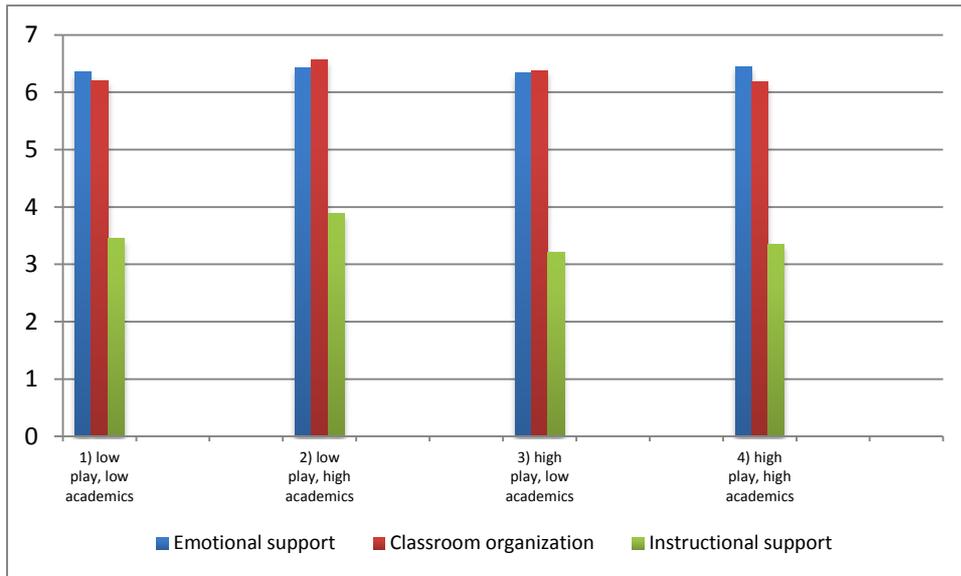


Figure 14 The process quality (CLASS Pre-K domains) in four types of the provision of play (below or above the mean) and academic activities (below or above the mean) in 3-6-years-old classrooms

Second, for the combination of (b) self-regulation and academics, four types of centers were distinguished for the 3-6-year-olds. The first type was characterised by a comparatively low score on the self-regulation scale (< 5.18) and a low score on the provision of pre-academic activities scale (< 4.54) ($n = 4$ classrooms). The second type was defined by a relatively low provision of self-regulation (< 5.18), but a higher provision of pre-academics (> 4.55) in the classroom ($n = 1$ classroom). The third type was marked by higher scores on self-regulation (> 5.19) and lower scores on pre-academics (< 4.54) ($n = 2$ classrooms). Finally, the fourth type reported a higher frequency of self-regulation (> 5.19) and also a higher frequency of pre-academic activities (> 4.55) ($n = 7$ classrooms).

Again, we related the fourfold typology to observed process quality. Since the second type was based on a single classroom, the results for this type are not interpreted. The results (see Figure 15) showed that there were no differences in Emotional support or Classroom organization across the remaining three different types. Instructional support was highest in classrooms with a combination of a strong focus on both self-regulation and pre-academic activities (type 4). Compared to the classrooms with an academic focus but low support of self-regulation (type 2), the normative difference was substantial, $d = 1.31$.

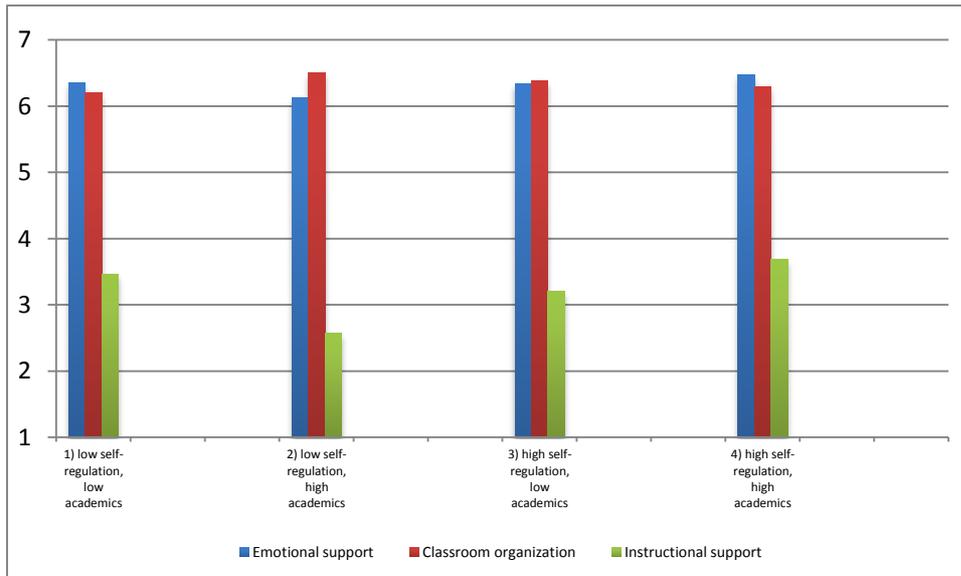


Figure 15 The process quality (CLASS Pre-K domains) in four types of the provision of self-regulation (below or above the mean) and academic activities (below or above the mean) in 3-6-years-old classrooms

Finally, for the combination of (c) self-regulation and play, four different types of centers were distinguished for 3-6-year-olds. The first type scored low on the provision of self-regulation (< 5.18) and low on the provision of play (< 4.59) (n = 5 classrooms). There were no classrooms matching the combination of a low provision of self-regulation (< 5.18) and high scores on the provision of play (> 4.60) in the classroom. The third type was characterized by higher scores on the self-regulation (> 5.19) and lower scores on the provision of play scale (< 4.59)(n = 2 classrooms). The fourth type had relatively high scores on the provision of play (> 4.60) and also relatively high scores on self-regulation (> 5.19) (n = 7 classrooms).

Again, we related the fourfold typology to observed process quality. The results (see Figure 16) showed that classrooms with a stronger focus on self-regulation and less emphasis on play scored higher on all observed process quality domains, especially in Instructional support compared to the other types. The differences were most marked for Instructional support, with the largest difference (type 1 vs. type 3) amounting to the normative d = 1.48.

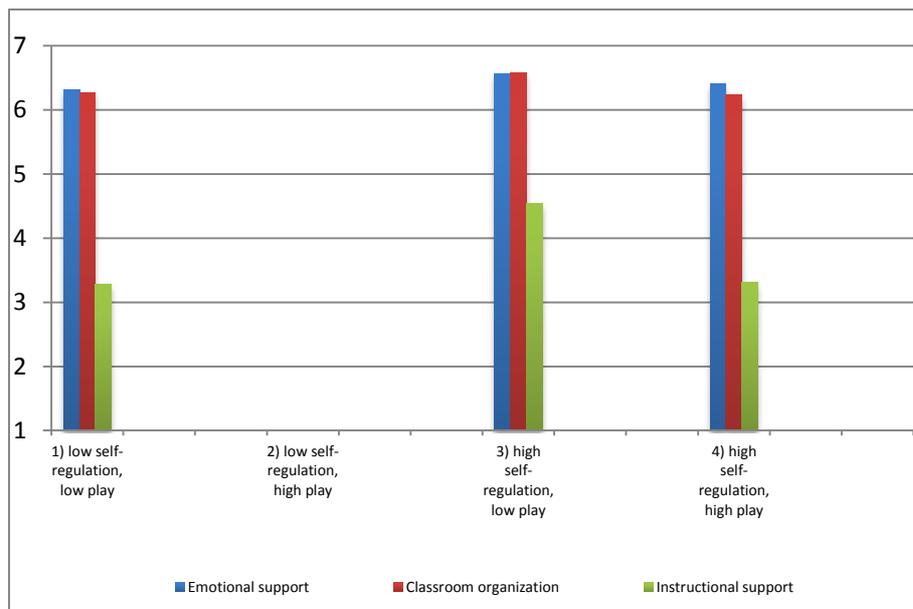


Figure 16 The process quality (CLASS Pre-K domains) in four types of the provision of self-regulation (below or above the mean) and play (below or above the mean) in 3-6-years-old classrooms. *Note.* The second type that was not represented in the data.

Overall, the findings for the 0-3-years-old classrooms showed that a balance of play, self-regulation and academic activities was related to the highest observed process quality in classrooms, while an emphasis on play together with less focus on academics was related to the lowest support for learning in 0-3-years-old classrooms. The current findings illustrate that it is not the frequency of the provision of certain activities perse, but rather the provided balance between different types of activities that appeared to be related to higher process quality. Overall, the findings for the 3-6-year-old classrooms showed that a balanced curriculum of self-regulation and academic activities was related to the highest observed quality, specifically instructional support. A strong emphasis on pretend play, even when balanced with other types of activities, appeared to be related to lower process quality.

It should be noted that the findings represent the variation in the provision of activities and observed process quality in the centers selected for the purpose of the current case study. The sample size is small and the comparison of different types of constellations of characteristics is based on even smaller numbers of classrooms. Therefore, the results cannot be generalized beyond the participating centers and should be interpreted with caution. The differences in instructional process quality found, as related to the provision of activities, were on average half a standard deviation and sometimes more (based on a normative standard deviation of .85), thus representing moderate-sized effects of the findings in the current sample. The findings may illustrate how choices in the curriculum of provided activities might be related to classroom processes in terms of observed social-emotional, behavioural and, in particular, educational aspects of educator-child interactions.

STUDY 3 - Structural quality, educator characteristics and practices

Introduction

Associations between the commonly investigated structural classroom characteristics, educator's qualifications, group size and, children-to-staff ratio, tend to be mixed and point to more complex relations. In addition, other structural aspects, including continuous professional development and job satisfaction, have shown to be important predictors of process quality as well. Moreover, a classroom is nested within a childcare organization and comprised multiple educators, administrators, and the physical environment, which most likely affect the ECEC quality as well. To date, only a few studies have included these other organizational characteristics at the center level, such as the organizational climate or team collaboration/cohesion, and found these to be positively related to quality (Bloom & Bella, 2005; Bloom & Sheerer, 1992; Sylva et al., 2004), with even stronger associations than for the usual classroom characteristics (Dennis & O'Connor, 2013). Organizational climate is a broad, overarching concept of the overall atmosphere of an organization, consisting of the collective perceptions, attitudes, beliefs, and values of the individuals working in the setting and their relationship with one another (Bloom, 2010). Key concepts of the organizational climate are Collegiality, Professional growth, Supervisor support, Clarity, Reward system, Decision-making, Goal consensus, Task orientation, Physical setting, and Innovativeness.

This study explores the conditions and contexts that support quality in the centers. The aim of the current study 3 is to gain more information on the educator, structural quality and organizational characteristics of the case study centers and to relate these to the observed process quality and educators' self-reported practices in ECEC settings. Group size, children-to-staff ratio, and educators's qualifications differ widely between the different countries, hence these need to be taken into account when interpreting the process quality as observed from the video data. Therefore, to gain a more comprehensive picture of ECEC it is important to look into different classroom level and center level structural quality aspects as well.

Method in Study 3

Data was collected in two 0–3-years old classrooms (total of 14 classrooms) and in two 3–6-years old classrooms (total of 14 classrooms) in each of the participating countries in a total of 28 selected centers. The cases were selected to constitute 'good practices' according to national criteria and/or expert opinion of good ECEC centers in each country.

Participating educators of all classrooms were given the questionnaire with questions on their professional background, classroom characteristics, and the provision of different types of curriculum activities (which was reported in Study 2). From each classroom, one or more educators returned the questionnaire, resulting in a total sample size of 77 educators (N = 41 for 0-3 classrooms; N = 36 for 3-6 classrooms). Not all educators filled out all questions resulting in missing data on some subscales. Below is an overview of the type of information gathered from the educators. To ensure confidentiality we anonymized the country-specific data and results.

Educator's background information. Educators reported their gender, age, educational background and their work experience. Education level was defined as the highest educational attainment of pre-service education and measured on three-point scale fitting best to the differences in education systems across the participating countries. Secondary vocational training was rated lowest (1), higher vocational training was rated (2) and a college or university degree was rated highest (3). They also reported whether they had participated in-service training in the past 2 years and they could list up to four different courses. This could include a number of things and was intended to capture training that is more extensive than just a one-day workshop or conference. They could also report the topic and duration of the in-service training in open-ended questions.

Job satisfaction was rated by educators using an existing scale used in previous research (pre-COOL Consortium, 2012). After removing one item that did not fit well into the scale, the scale of Job satisfaction consisted of 14 items and showed adequate internal consistency ($\alpha = .75$). Answers were rated on a 5-point scale ranging from 1 (*never*), 2 (*sometimes*), 3 (*regularly*), 4 (*often*) to 5 (*always*). An example of an item is "On the whole, I find my work very meaningful".

Self-efficacy was rated by educators using a shortened and slightly adapted version of the Teacher Efficacy Scale (Tschannen-Moran, Woolfolk, & Hoy, 2001). This scale assesses the challenges educators encounter in their daily work in the classroom and the extent to which they feel they are capable of dealing with these challenges. The items concerned dealing with children's problematic classroom behaviour, adapting activities and guidance to children's individual needs, and supporting children's understanding and their development. The scale consisted of 9 items and showed adequate internal consistency ($\alpha = .80$) across countries. The answers were rated on a 5-point scale ranging from 1 (*not at all*), 2 (*very little*), 3 (*somewhat*), 4 (*quite well*), to 5 (*to a very large degree*). An example of an item is "To what extent can you adapt activities and guidance to a child's individual level/needs?".

Organizational climate was rated by educators using the short form of the Early Childhood Work Environment Survey (Bloom, 2010) on a rating scale with 1 (*never*), 2 (*seldom*), 3 (*sometimes*), 4 (*somewhat regularly*), 5 (*frequently*), and 6 (*always*). The scale Organizational climate consisted of 20 items and showed adequate internal consistency ($\alpha = .91$) across countries. Key concepts of the organizational climate are:

Collegiality: the degree to which staff are friendly, trust one another and there is good team spirit.

Professional growth: the extent to which there is an emphasis on staff's professional development.

Supervisor support: the degree to which leadership is supportive and competent.

Clarity: the extent to which policies and procedures are clear and job responsibilities are well defined.

Reward system: the degree to which salaries and benefits are equitably distributed and promotions are handled fairly.

Decision-making: the extent to which the staff can express their opinions and help make decisions about things that directly affect them.

Goal consensus: the degree to which there is a shared, common vision and philosophy concerning the goals and educational objectives.

Task orientation: the emphasis put on organizational effectiveness and efficiency, for instance regarding meetings.

Physical setting: the extent to which the work environment is attractive, well organized and well equipped to enable staff to do their job.

Innovativeness: the degree to which the center encourages change, creativeness and innovativeness in their staff and implements it accordingly.

Professional development activities were rated by educators using an existing scale used in prior research in ECEC provisions (Slot et al., 2015). The scale evaluates the degree to which different strategies of continuous professional development were implemented at the center. Educators rated how frequently these activities occurred on a scale ranging from 1 (*never*), 2 (*less than once a month*), 3 (*once a month*), 4 (*twice or thrice a month*), 5 (*weekly*), 6 (*two to four times a week*), and 7 (*every day*). The scale consisted of 7 items and showed adequate internal consistency ($\alpha = .76$) across countries. Examples were: Having regular staff meetings to discuss the developmental and educational goals of working with young children, discussing children with special developmental and educational needs, using collegial observation and feedback to improve practice, coaching, and team-based reading of professional literature.

Classroom characteristics. Educators reported information on the classroom including the number of children in the classroom (group size), number of staff in the classroom, children-to-staff ratio, age range of the children, and ethnic-cultural group composition (1) predominantly majority children, (2) about 50-50 mix of children, (3) predominantly children with another ethnic/cultural background, and the number of children with developmental, behaviour or other types of problems or disabilities (based on the educators' opinion).

Results

The results will be provided separately for 0-3 and 3-6-years old classrooms, as there may be relevant difference between the two types other than the age range of the children enrolled in the centers. It is important to note that the cases for this study were selected to constitute 'good practices' according to national criteria and/or expert opinion of good ECEC centers in each country. Therefore, the centers and hence the educators working in these centers are not representative for the common practices in their countries and thus the results from the educator's questionnaire data might be a reflection of selection effects.

Educators' characteristics

Table 10 presents the education levels of educators of classrooms for 0–3 and 3–6-year-old children across the participating countries. The results show that, on average, educators working with younger children were lower educated compared to educators working with older children. Having a

college or university degree was more common for educators working with 3-6-years olds. However, there generally tends to be a mix of educators with different qualifications.

Table 10 Education level of educators for 0-3 and 3-6-years-old classrooms in participating countries

	Education level of educators					
	0-3-year old classrooms			3-6-year old classrooms		
	Secondary vocational Frequency (%)	Higher vocational Frequency (%)	College/university Frequency (%)	Secondary vocational Frequency (%)	Higher vocational Frequency (%)	College/university Frequency (%)
A		1 (25%)	3 (75%)		2 (33%)	6 (67%)
B		4 (80%)	1 (20%)		4 (50%)	4 (50%)
C		5 (100%)			2 (33%)	4 (67%)
D		4 (50%)	4 (50%)		2 (50%)	2 (50%)
E	1 (25%)	2 (50%)	1 (25%)	1 (50%)	1 (50%)	
F	4 (50%)	4 (50%)				5 (100%)
G		3 (60%)	2 (40%)			2 (100%)

Tables 11 and 12 show characteristics of the educators. In the current selective sample, educators working in classroom for 3–6-year-olds were, on average, older and had longer work experience than the educators working with younger children. However, there appears to be quite some variation within countries, given the large age range of educators in the different countries. Also the variation in work experience within countries is substantial, suggesting a mix of less and more experienced educators in centers. Most educators reported working between 4 to 5 days a week.

The educators working in classrooms for 3–6-years olds reported feeling better equipped in dealing with different challenges in their work with children compared to the educators working in 0-3-years old classrooms although there appear to be differences between countries. Regarding the educator’s job satisfaction the pattern was very mixed, although on average the educators seemed rather satisfied.

The educators also reported on aspects of their center or organization. The overall organizational climate was rated higher by educators working with older children compared to educators working with younger children, although there was quite some variation within countries, and especially in centers for 0-3-years old there were large differences between countries.

Regarding the provision of professional development (PD) activities in the center, there were large differences between countries and within countries between the two types of provision. Finally, the educators reported on whether they attended in-service training, excluding conferences or one-day workshops, in the past two years. On average, additional in-service training appeared to be more common for educators working with older children (except for country E). However, none of the educators working with 0-3-years-olds in countries C, F, and G reported having attended any in-service training in the past two years. Moreover, further analyses showed that five out of six educators with secondary training level did not participate in any in-service training in the past two years, whereas the pattern was more mixed for the educators with higher qualifications wherein about half of the educators attended in-service training. The most important reason for this was that the majority of the lower educated educators came from same country (country F), where the educators in centers for 0-3-years-old had not attended any additional in-service training.

Table 11 Descriptive statistics per country for educators in 0-3-year-old classrooms

Country		N	Age	Working hours per week	Work experience in years	Self-efficacy	Job satisfaction	Organizational climate	Professional development activities	Educators attended in-service training
A	<i>M</i>	5	35	37.60	9.20	4.03	3.80	5.02	3.68	80%
	<i>SD</i>		12.02	7.40	7.60	.24	.79	.52	.18	
	Range		23-51	30-50	1-20	3.88-4.38	3.07-4.71	4.44-5.56	3.43-3.86	
B	<i>M</i>	5	39	37.88	14.40	3.92	3.43	3.76	3.83	0%
	<i>SD</i>		10.51	.36	8.59	.31	.35	.91	.68	
	Range		23-49	37.50-38.20	1-25	3.63-4.25	3.07-4.67	2.75-4.55	3.29-4.57	
C	<i>M</i>	5	31.33	23.25	2.50	4.13	3.68	3.76	2.75	80%
	<i>SD</i>		10.11	17.61	1.73	.34	.53	.91	.50	
	Range		25-43	8-39	1-5	3.88-4.67	3.07-4.38	2.75-4.55	2.00-3.33	
D	<i>M</i>	8	38.75	34.38	14.88	3.78	3.61	5.00	4.86	100%
	<i>SD</i>		8.05	5.15	8.36	.35	.40	.86	.86	
	Range		25-51	23-40	1-29	3.13-4.13	2.79-3.93	3.57-5.71	3.57-5.71	
E	<i>M</i>	4	33.75	22.63	9.88	4.19	3.75	5.20	3.07	75%
	<i>SD</i>		9.95	9.16	3.22	.30	.29	.77	1.82	
	Range		26-48	13-34	6-13	3.88-4.50	3.50-4.07	4.40-6.00	1.57-5.71	
F	<i>M</i>	8	37.13	40	9.57	4.33	3.86	4.36	5.12	0%
	<i>SD</i>		8.54	0	8.05	.22	.48	.57	1.65	
	Range		30-52	40-40	3-25	4.13-4.75	3.00-4.50	3.11-4.80	1.86-7.00	
G	<i>M</i>	5	28.40	33.20	6.75	4.58	4.31	5.85	4.20	0%
	<i>SD</i>		6.39	7.33	4.65	.39	.42	.34	.76	
	Range		19-35	25-40	2-13	3.88-4.75	3.85-4.86	5.25-6.00	3.57-5.29	

Table 12 Descriptive statistics per country for educators in 3–6-years-old classrooms

Country		N	Age	Workin hours per week	Work Experience in years	Self-efficacy	Job satisfaction	Organizational climate	Professional development activities	Educators attended in-service training
A	<i>M</i>	11	39	32.89	10.33	4.33	3.74	5.00	3.87	37.5%
	<i>SD</i>		12.08	12.02	4.72	.32	.42	.49	.73	
	Range		24-57	5-50	1-15	3.88-4.75	2.93-4.21	4.00-5.00	2.00-4.57	
B	<i>M</i>	8	44.25	38.18	16.50	4.27	3.49	4.62	3.43	37.5%
	<i>SD</i>		14.28	.14	15.39	.29	.34	.59	.74	
	Range		25-63	38-38.50	2-39	3.75-4.75	3.21-4.21	3.63-5.45	2.43-4.71	
C	<i>M</i>	6	40.8	36.67	16	4.00	4.12	5.32	2.83	100%
	<i>SD</i>		9.62	5.72	7.64	.44	.44	.36	.66	
	Range		28-51	25-39	8-25	3.25-4.50	3.36-4.50	4.84-5.75	2.00-4.00	
D	<i>M</i>	4	42.50	34.25	16.50	3.97	3.89	4.82	4.40	50%
	<i>SD</i>		9.47	2.87	8.89	.12	.32	.60	1.20	
	Range		34-53	30-36	5-24	3.88-4.13	3.57-4.29	4.12-5.32	3.14-5.43	
E	<i>M</i>	2	58	37	13.5	4.44	4.14	5.49	4.71	0%
	<i>SD</i>		7.07	18.38	3.54	.62	.30	.27	.80	
	Range		53-63	24-50	11-16	4.00-4.88	3.93-4.36	5.30-5.68	4.14-5.29	
F	<i>M</i>	5	34.40	28	10.80	4.58	3.68	4.97	4.06	20%
	<i>SD</i>		14.79	6.71	14.22	.27	.13	.37	.26	
	Range		24-58	25-40	1-34	4.25-5.00	3.50-3.85	4.65-5.50	3.71-4.29	
G	<i>M</i>	2	53.50	32.50	30	4.50	3.82	5.29	2.48	100%
	<i>SD</i>		.71	3.53	2.82	.71	.25	.79	.27	
	Range		53-54	30-35	28-32	4.00-5.00	3.64-4.00	4.73-5.85	2.29-2.67	

Relations between educator and center characteristics

Table 13 shows the associations between educator characteristics and some working conditions. Educators who reported higher self-efficacy in their work also reported higher job satisfaction and a better organizational climate in their center. Higher job satisfaction was also related to the educators' perception of a better organizational climate and more opportunities for professional development.

Table 13 Associations between educator and center characteristics (N = 69-76 educators)

	Work experience	Self efficacy	Job satisfaction	Pre-service training	Organizational climate	Professional development
Age	.80***	.05	.12	-.08	.07	.03
Work experience		-.03	.22	-.10	.16	.08
Self-efficacy			.31**	.00	.31**	-.04
Job satisfaction				-.21	.56**	.23*
Pre-service training					-.04	-.29*
Organizational climate						.03

** $p < .01$, * $p < .05$

Relations between educator characteristics and observed process quality

To enhance our understanding of how different educator and center characteristics (as experienced by individual educators) interact and, as such, are related to observed process quality, we analysed different typologies of centers based on some of the educator characteristics reported in the previous section. Based on the different educator and classroom characteristics we investigated different patterns of combinations: (a) work experience and in-service training; and (b) organizational climate and professional development opportunities. Differences in types and how these are related to observed process quality are only interpreted in case of (close to) medium sized effects or larger in terms of Cohen's d (based on the differences in means between types divided by the normative standard deviation of .85; see Chapter 2).

Centers for 0-3-year olds

First, four different types of classrooms were distinguished for centers for 0-3 year olds and we started out by looking at patterns of educators' work experience (based on a mean-split of the aggregated classroom level score) and whether the majority of educators had attended any in-service training in the past two years (yes or no). The first type was characterized by educators with little work experience (< 11 years) and who did not attend any in-service training in the past two years ($n = 5$ classrooms). The second type of classrooms was defined by having more work experience (> 11 years), but had not attended any form of in-service training ($n = 3$ classrooms). The third type was marked by educators with little work experience (< 11 years), but who did attend any form of in-service training in the past two years ($n = 3$ classrooms). Finally, the fourth type of classrooms was defined by having more experienced educators (> 11 years) who had also attended in-service training in the past two years ($n = 2$ classrooms). We related the fourfold typology to observed process quality assessed by the CLASS. The results (see Figure 17) showed that Emotional support and Support for Learning were highest in classrooms with more experienced educators who had also attended in-service training in the past two years. Differences in Emotional support were

medium-sized based on the normative standard deviation and even strong between type 2 and type 4. Differences in Support for learning were also (close to) medium-sized and even strong for the difference between type 1 (most unfavorable combination) and type 4 (most favorable combination), with the normative Cohen's $d = .87$. Educators with less work experience who had not attended in-service training showed the lowest level of Support for learning. In fact, this type with the most unfavourable conditions was the largest group. There were no differences between type 2 and type 3, suggesting that work experience and additional in-service training in itself are not related to higher quality in this selective sample, rather the *combination* of both aspects.

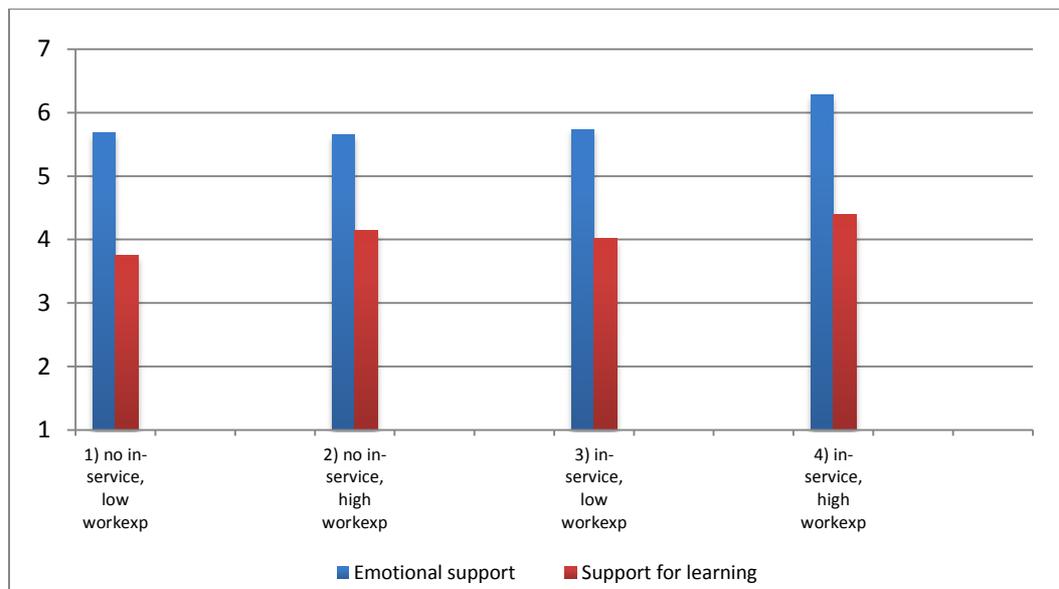


Figure 17 Four different types of additional in-service training (yes/no) and the amount of educators' work experience (below or above the mean) in centers for 0-3-years-old as related to observed process quality (CLASS Toddler domains)

Second, likewise, we distinguished four different types based on educator reported provision of professional development activities in the center (based on aggregated classroom scores) and the overall organizational climate as experienced by the educators (based on aggregated scores below and above the reported mean scores). The first type was characterised by comparatively few activities for continuous professional development in the center (< 3.79) as well as a low overall organizational climate (< 4.71) ($n = 3$ classrooms). The second type of centers was defined by few professional development activities (< 3.79), but a higher overall organizational climate (> 4.72) ($n = 3$ classrooms). The third type was marked by more professional development activities (> 3.80) combined with lower overall organizational climate (< 4.71) ($n = 3$ classrooms). Finally, the fourth type reported a combination of more frequent professional development activities (> 3.80) and a higher overall organizational climate (> 4.72) ($n = 4$ classrooms). We again related the fourfold typology to observed process quality.

The results (see Figure 18) showed that educators working in centers with an overall better organizational climate combined with more opportunities for continuous professional development provided the highest in Emotional support compared to all other types. Cohen's d for the largest difference (between type 3 and type 4) amounts to $.54$ (medium effect; based on the normative standard deviation). Moreover, the Support for learning in centers with a combination of more professional development activities and a better organizational climate was higher compared to

centers with either more professional development opportunities or a better organizational climate. The largest difference (again between type 3 and type 4) was $d = .87$ (strong effect).

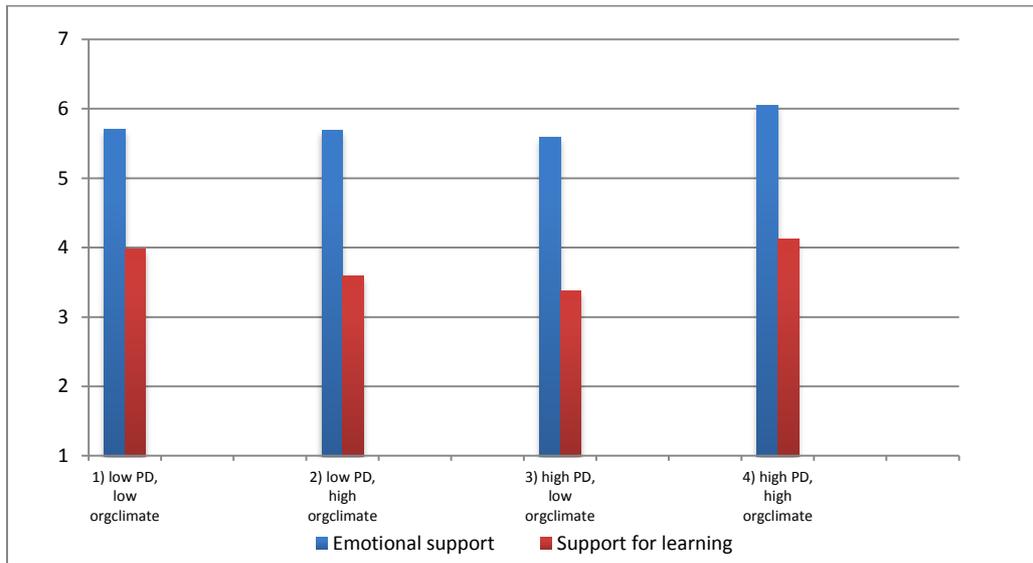


Figure 18 Four different types of professional development activities at centers for 0-3 year olds (below or above the mean) and overall organizational climate (below or above the mean) as related to observed process quality

Centers for 3-6-years-old

First, for centers for 3-6 year olds also four different types were distinguished concerning educators' work experience (based on a mean-split of the aggregated classroom level score) and whether the majority of educators had attended any in-service training in the past two years (yes or no). The first type of centers was characterized by having educators with comparatively little work experience (< 14.50 years) and who did not attend in any in-service training in the past two years ($n = 2$ classrooms). The second type of centers was defined by having educators with comparatively more work experience (> 14.51 years), but who had not attended any form of in-service training ($n = 2$ classrooms). The third type was marked by having educators with little work experience (< 14.50 years), but who did attend any form of in-service training in the past two years ($n = 3$ classrooms). Finally, the fourth type of centers was characterized by more experienced educators (> 14.51 years) who also had attended in-service training in the past two years ($n = 5$ classrooms).

We again related the fourfold typology to observed process quality. The results (see Figure 19) showed that the highest level of Classroom organization appeared in classrooms with less experienced educators who had not attended in-service training. The differences with the other types ranged from (close to) medium-sized to strong, with $d = .76$ (based on the normative standard deviation). Differences regarding the other process quality measures were less clear. For Instructional support, the educators with more work experience who had not attended in-service training showed the lowest quality. Noteworthy, is the large variation in the current sample in observed Instructional quality for the group of educators who had more work experience and had also attended in-service training in the past two years.

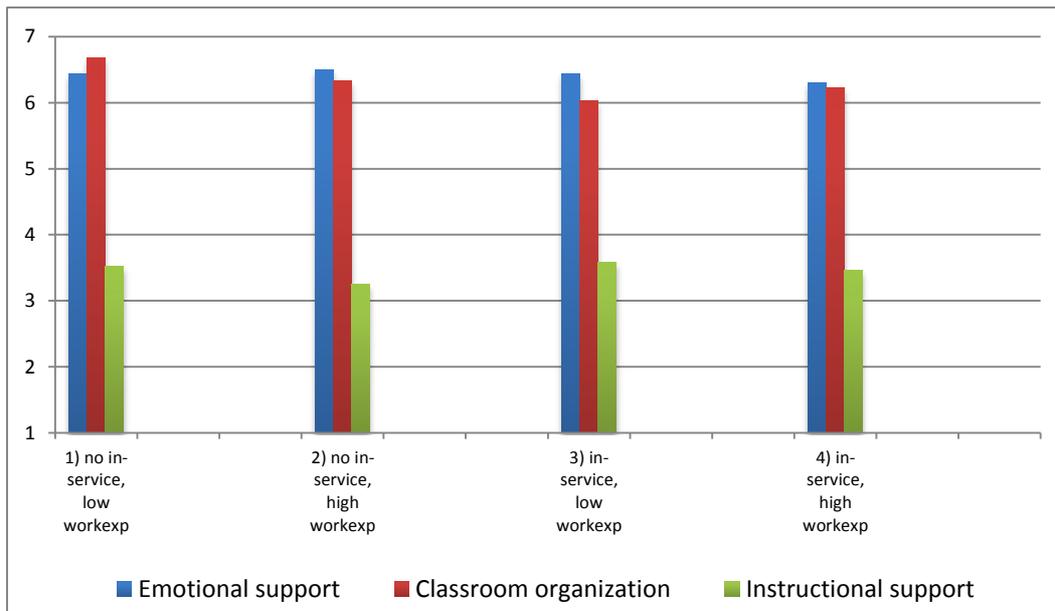


Figure 19 Four different types of additional in-service training (yes/no) and the amount of educators' work experience (below or above the mean) in 3–6-years-old centers as related to observed process quality (CLASS Pre-K)

Second, likewise, we distinguished four different types based on educator reported provision of professional development activities in the center (based on the aggregated classroom score) and the overall organizational climate of the center as experienced by the educators (based on aggregated scores below and above the reported mean scores). In the first type of classrooms educators reported comparatively few activities for continuous professional development in the center (< 3.36) as well as a low organizational climate (< 4.82) in the center (n = 4 classrooms). The second type of classrooms was characterized by comparatively few professional development activities (< 3.36), but with a higher organizational climate in center (> 4.83) (n = 2 classrooms). The third type of classrooms was marked by comparatively more professional development activities (> 3.37) combined with lower organizational climate (< 4.82) (n = 3 classrooms). Finally, the fourth type was defined by more frequent professional development activities (> 3.37) and a higher organizational climate (> 4.83) (n = 5 classrooms).

We again related the fourfold typology to observed process quality. The results (see Figure 20) showed that observed emotional quality and classroom organization was highest, compared to all other types, in centers where more professional development activities were provided while ratings of the organizational climate were lower. The largest difference between this type and type 2, is $d = .61$ (based on the normative standard deviation). For instructional support, teachers reporting little professional development activities in the center combined with a higher overall organizational climate, showed the lowest observed quality compared to all other types, with differences being strong in Cohen's terms. These findings suggest that professional development activities seem to be more important for higher observed process quality than the organizational climate in the center.

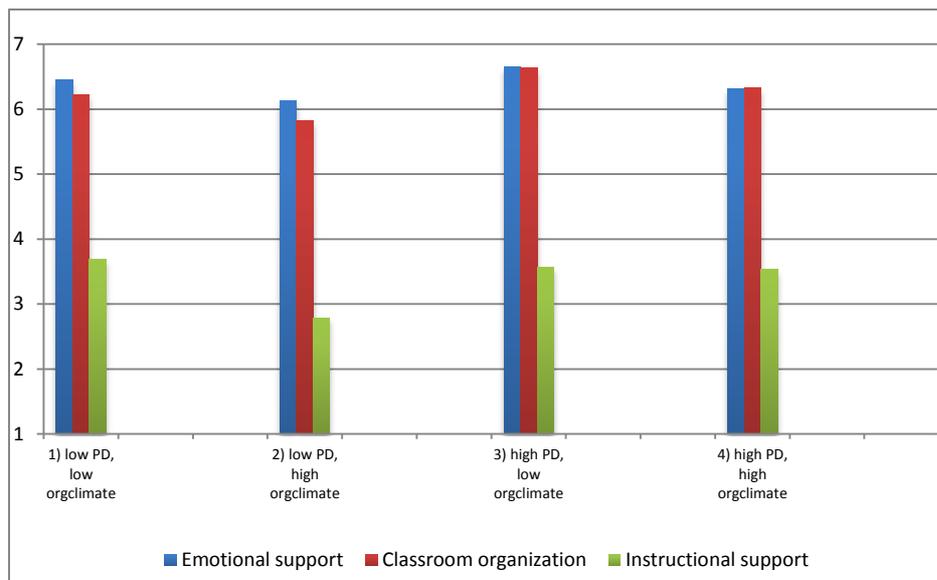


Figure 20 Four different types of professional development activities (below or above the mean) and overall organizational climate (below or above the mean) at the 3–6 years old center as related to observed process quality (CLASS Pre-K)

Overall, the results for the 0-3 years old centers show that the highest emotional and educational quality was related to the *combination* of the most favourable characteristics of educators. Single aspects seem to be of less importance rather the combination of being more experienced and the provision of additional in-service training was beneficial in terms of higher process quality in ECEC classrooms. Likewise, the combination of more professional development activities within a better organizational climate in terms of collegiality, a supportive supervisor, joint decision-making and clearly defined goals based on a shared mission and orientation, showed the highest quality. Overall, the findings for educators in centers for 3-6 year olds were less consistent. In-service training was not related to observed quality but there was some support for the provision of professional development activities as related to higher process quality.

It should be noted that the findings represent the variation in the educators' characteristics and the observed process quality in the centers selected for the purpose of the current case study. The sample size of this multiple case study is small and the comparison of different types of constellations of characteristics is based on even smaller numbers of classrooms. Therefore, the results cannot be generalized beyond the participating centers and should be interpreted with caution. The differences in process quality found, as related to the educators' characteristics, were on average half a standard deviation or more (based on a normative standard deviation of .85), thus representing moderate-sized to strong effects of the findings in the current sample and illustrating the complexities of relations between educators' characteristics and process quality.

Classroom characteristics

Table 14 and 15 show the descriptive information for centers at the classroom level (in some cases based on multiple educators reporting over the same classroom in which case the scores were aggregated). The results indicate that there is quite some variation regarding group size, ranging from 13 to 36 children for centers for 0-3 year olds. However, when looking at the children-to-staff ratio there appear to be different models at stake. For 0-3 years old centers there appear to be four

different models. The first, most common model, concerned small groups with a few educators (countries C, E and G). Second, there were relatively small groups with multiple educators (countries A and B). Third, are centers with large groups and with many educators (country D). The fourth model concerned large groups with a few educators (country F). These differences could be confounded with the classroom composition regarding children's age. The centers from countries F and G were the ones with the most unfavourable ratios, but these centers also had the most age-homogeneous and the oldest children in the classrooms. The centers from country A seem to be the exception here, with the most favourable children-to-staff ratio despite having only 2-3 years old children in the classroom.

Likewise, there was quite some variation in group size ranging from 16 to 42 children in classrooms for 3-6 year olds. There were again different combinations of centers with small and large group size and with small or large children-to-staff ratios. For instance, the centers from country E reported a relatively small group, but with only one educator, whereas the small group in centers from country B had multiple educators. Similar to the classrooms for 0-3 year olds, patterns were found for older children with classrooms consisting of relatively younger children having more favourable ratios than classrooms with older children.

Furthermore, educators from all countries (except from country D) reported having quite a few children with behavioural problems or developmental delays or disabilities. Educators from country B, and to a lesser extent also from country D, reported having quite a few children with language delays in their classrooms, which is most likely related to the more culturally diverse classroom composition.

Relations between structural quality and observed process quality

To gain a better understanding of the relations between structural aspects, such as group size and children-to-staff ratio, and observed classroom process quality we identified different patterns. As reported above in the descriptive information there seems to be different models of group size and children-to-staff ratio in the centers from the different countries. We used the information from the educator questionnaire aggregated to the classroom level, as indicative of more stable information regarding the number of children enrolled in the classroom and the number of educators working in the classroom compared to the observed group size and ratio on the videotapes, as this may be confounded with specific circumstances (such as illness of educators or children or permission to be videotaped). Differences in types and how these were related to observed process quality are only interpreted in case of medium sized effects or larger in terms of Cohen's d (based on the differences in means for the types and the normative standard deviation of .85).

Table 14 Descriptive statistics per country for 0-3-year-old classroom characteristics

Country		N	Number of children	Number of educators	Ratio	Age range of children in classroom	Ethnic/cultural classroom composition	Number of children with language delay	Number of children with special needs/problems
A	<i>M</i>	2	17	4.25	4	2-3 yrs	Both centers country's main language	0	2
	<i>SD</i>		6	1.5	0				0
	Range		8-20	2-5	4-4				2-2
B	<i>M</i>	2	13.20	3	4.40	0-3 yrs	Both centers country's main language	2.5	.33
	<i>SD</i>		.45	0	.15				.47
	Range		13-14	3-3	14.33-14.67				2-3
C	<i>M</i>	2	17.60	2.60	6.80	0-3 yrs	C1 country's main language C2 50/50	2 0	4
	<i>SD</i>		3.28	.55	.18				2.82
	Range		14-20	2-3	6.67-7				2-2
D	<i>M</i>	2	22.13	4.63	4.78	0-3 yrs	Both centers country's main language	0	.80
	<i>SD</i>		2.59	.52	.03				.28
	Range		19-24	4-5	4.75-4.80				.60-1.00
E	<i>M</i>	2	14.25	2.25	6.46	0-3 yrs	C1 country's main language C2 50/50	2 0	1
	<i>SD</i>		1.50	.50	.89				1.41
	Range		13-16	2-3	5.33-7.50				2-2
F	<i>M</i>	2	36	4	9	2-3 yrs	Both centers country's main language	0	4.5
	<i>SD</i>		0	0	0				5.03
	Range		36-36	4-4	9-9				.75-8.25
G	<i>M</i>	2	16.80	2.40	8	2-3 yrs	Both centers country's main language	0	.50
	<i>SD</i>		3.19	.89	3.92				.71
	Range		12-19	1-3	6-15				0-1

Table 15 Descriptive statistics per country for 3–6-years-old classroom characteristics

Country		N	Number of children	Number of educators	Ratio	Age range of children in classroom	Ethnic/cultural classroom composition	Number of children with language delay	Number of children with special needs/problems
A	<i>M</i>	2	33	5.23	6.38	3-4 yrs	Both centers country's main language	0	8.75
	<i>SD</i>		9.90	.32	2.29				1.07
	Range		26-40	5.00-5.45	4.77-5.45				8-9.5
B	<i>M</i>	2	22	3	7.33	3-6 yrs	C1 country's main language C2 50/50	5.50	6.17
	<i>SD</i>		0	0	0			7.78	1.65
	Range		22-22	3-3	7.33			0-11	5-7.33
C	<i>M</i>	2	42	5.50	7.75	0-6 yrs	Both centers country's main language	1.50	4
	<i>SD</i>		25.46	3.54	.35			.71	2.83
	Range		24-60	3-8	7.50-8.00			1-2	2-6
D	<i>M</i>	2	24.50	2.50	10.33	3-5 yrs	C1 country's main language C2 50/50	2.50	.50
	<i>SD</i>		2.12	.71	3.77			.71	.71
	Range		23-26	2-3	7.67-13.00			2-3	0-1
E	<i>M</i>	2	16.50	1	16.50	4-5 yrs	C1 country's main language C2 Majority another language	1	3.50
	<i>SD</i>		9.19	0	9.19			1.41	4.95
	Range		10-23	1-1	10-23			0-2	0-7
F	<i>M</i>	2	24	2.50	10.08	3-6 yrs	Both centers country's main language	0	7.33
	<i>SD</i>		1.41	.71	3.42				2.36
	Range		23-25	2-3	7.67-12.50				5.67-9.00
G	<i>M</i>	2	25.50	1.50	19	4-6 yrs	Both centers country's main language	0	3.50
	<i>SD</i>		.71	.71	8.49				2.12
	Range		25-26	1-2	13-25				2-5

Centers for 0-3-year-olds

Based on the mean group size and mean reported number of adults, we divided the sample into four different types of 0–3 years old classrooms (N = 12, because there was missing information for two classrooms). The first type of classrooms was characterized by a relatively large group size (> 15.60 children) and a large, unfavourable children-to-staff ratio (> 6.34 children per educator) (n = 3 classrooms). The second type of classrooms was defined by a comparatively small group size (< 15.50 children) but with a large, unfavourable, children-to-staff ratio (> 6.34 children per educator) (n = 3 classrooms). The third type of classrooms was marked by a relatively large group size (> 15.60 children) and a relatively small, favourable, children-to-staff ratio (< 6.33 children per educator) (n = 3 classrooms). Finally, the fourth type of classrooms was characterized by a small group size (< 15.50 children) and a small, favourable, children-to-staff ratio (< 6.33 children per educator) (n = 3 classrooms).

We related the fourfold typology to observed process quality. The results (see Figure 21) showed that the observed emotional and educational quality was highest in two types of classrooms, either with an unfavourable group size of 16 children or more *or* an unfavourable children-to-staff ratio of at least 6 children per teacher. A noteworthy result was that classrooms with the best structural quality in terms of smaller group size and a favourable (low) children-to-staff ratio did not show the highest observed process quality. The difference of this type with the other types were weak to medium-sized for Emotional support and medium-sized to strong for Support for learning (based on the normative standard deviation). Further inspection of the video data and field notes (Study 1) showed that in all classrooms the actual observed number of children during the videotaped activities was lower than that based on the teacher reports, suggesting that the provision of at least some types of activities are conducted in smaller groups. For example, in the third type (with a large group size and a small children-to-staff ratio based on educators' reports) the actual observed group size during the videos was lower (n = 6 children) than in the second type (n = 8 children) with a lower overall group size as reported by educators, suggesting that educators in classrooms with an overall larger group size might choose to work in smaller groups more often during the day. Some activities, such as meal or free play were also conducted in larger groups, but particularly creative and educational/emerging academic activities appeared to be conducted in small group settings.

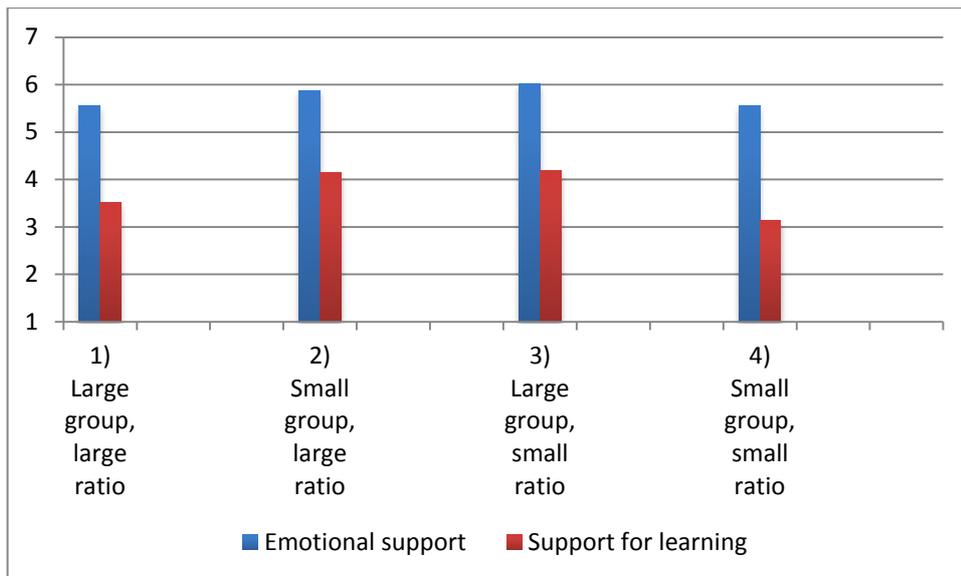


Figure 21 Patterns of quality based on different types of 0–3-year-old classrooms in terms of group size and children-to-staff ratio as related to observed process quality (CLASS Toddler)

Centers for 3-6 year olds

Likewise, a similar procedure was followed for the 3–6 yearsold classrooms based on the mean group size and mean reported number of adults ($N = 13$, because there were missing information for one classroom). The first type of classrooms was characterized by a large group size (> 25.00 children) and a large children-to-staff ratio (> 7.68 children per educator) ($n = 5$ classrooms). The second type of classrooms was defined as having a small group size (< 24.00 children) but with a large children-to-staff ratio (> 7.68 children per educator) ($n = 3$ classrooms). In the third type the classrooms were marked by had a large group size (> 25.00 children) and a small children-to-staff ratio (< 7.67 children per educator) ($n = 1$ classroom). Finally, the fourth type of classrooms was characterized by a small group size (< 24.00 children) and a small children-to-staff ratio (< 7.67 children per educator) ($n = 4$ classrooms).

Again, the fourfold typology was related to observed process quality. The results (see Figure 22) showed that there were different types of classrooms in terms of group size and children to-staff ratio related to higher observed quality. Emotional support was lowest in classrooms with a small group size but a large children-to-staff ratio compared to all three other types, with the biggest standardized difference between this type and the type with the most unfavourable conditions amounting to $d = .52$ (based on the normative standard deviation). Classroom organization was highest in both classrooms with a large group size and unfavourable children-to-staff ratio and in classrooms with a small group size and a favourable children-to-staff ratio. The largest differences between types were medium-sized. Similarly, regarding Support for learning the differences between the most favourable and the most unfavourable clusters was $d = .66$ and between most favourable cluster and the type with small group, but unfavourable ratio was $d = .85$ (strong effects; based on the normative standard deviation). Although at first this might seem a contradictory finding, further investigation of the results showed that the actual observed group size and children-to-staff ratio were highly comparable across both types of classrooms. Instructional support was higher in classrooms with a larger group size, regardless of the children-to-staff ratio, and was highest in classrooms with unfavourable ratios. Having overall larger groups of more than 25 children and more

unfavourable ratios of more than 8 children per educator may reflect a stronger need for a more structured and organized practices, which in turn might result in doing the instructional support more efficiently. Upon further inspection of the video data and field notes (Study 1), the classrooms with larger groups and unfavourable ratios indeed provided most activities in smaller groups.

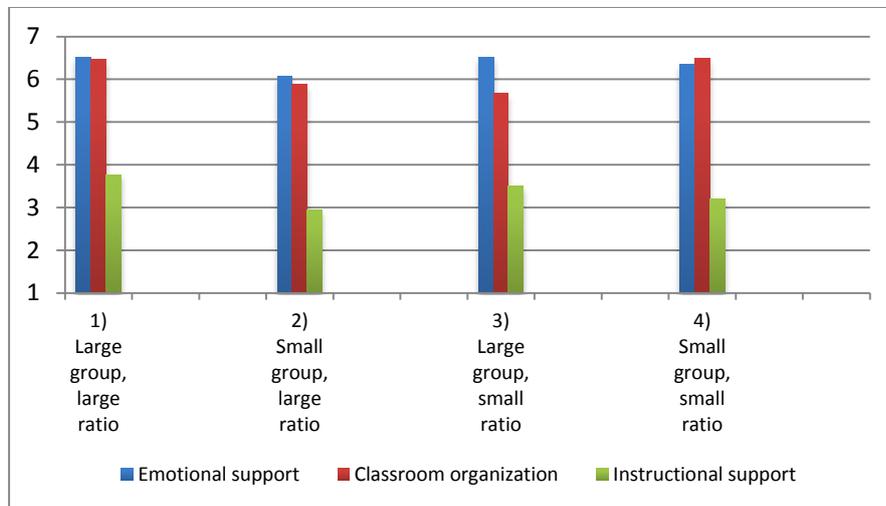


Figure 22 Patterns of quality based on different types of 3–6 years old classrooms in terms of group size and children-to-staff ratio as related to observed process quality (CLASS Pre-K)

Overall, the results of the current multiple case study for both 0-3 and 3-6 years old classrooms showed that observed process quality was not necessarily the highest in classrooms with the best structural conditions in terms of small group size and favourable children-to-staff ratios. However, the findings of the videotapes and field notes reflect different choices educators make in terms of whole group and small group activities during the day. In classrooms with, on average, larger group sizes, educators provided at least some of the activities in smaller groups during the day.

It should be noted that the findings represent the variation in the structural characteristics and the observed process quality in the centers selected for the purpose of the current case study. The sample size of this multiple case study is small and the comparison of different types of constellations of characteristics is based on even smaller numbers of classrooms. Therefore, the results cannot be generalized beyond the participating centers and should be interpreted with caution. The differences in process quality found, as related to the structural classroom characteristics, were on average half a standard deviation or more, thus representing moderate-sized effects of the findings in the current sample and illustrate the complexities of relations between structural aspects and process quality.

Relations between educator characteristics and curriculum

To enhance our understanding of how different educator and center characteristics (as experienced by individual educators) interact and, as such, are related to the provided curriculum, we looked at different typologies of centers. We used the previously distinguished three types of activities: *play* (mean score based on the pretend play scale of all educators in the classroom), *self-regulation* (mean score based on the self-regulation scale of all educators in the classroom) and *pre-academics* (mean score based on the language, literacy, math, and science scales). Based on the different educator and

classroom characteristics we investigated different patterns of combinations: (a) work experience and in-service training; (b) organizational climate and professional development opportunities. Differences in types and how these are related to observed process quality are only interpreted in case of medium sized effects or larger in terms of Cohen's *d* (based on the differences in means for the types and a normative standard deviation of .90, following previous research with the educator questionnaire, see Slot et al., 2015).

Centers for 0-3-year-olds

First, four different types of classrooms were distinguished for centers for 0-3-year olds and we begin by looking at patterns of educators' work experience (based on a mean-split of the aggregated classroom level score) and whether the majority of educators had attended any in-service training in the past two years (yes or no). The first type was characterized by educators with little work experience (< 11 years) and who did not attend any in-service training in the past two years (n = 5 classrooms). The second type of classrooms was defined by having more work experience (> 11 years), but had not attended any form of in-service training (n = 3 classrooms). The third type was marked by educators with little work experience (< 11 years), but who did attend any form of in-service training in the past two years (n = 3 classrooms). Finally, the fourth type of centers was defined by having more experienced educators (> 11 years) who had also attended in-service training in the past two years (n = 2 classrooms).

We related the fourfold typology to the provided curriculum. The results (see Figure 23) showed that more experienced educators who had not attended any in-service training, reported a slightly stronger emphasis on play. Remarkable big differences were found regarding the provision of self-regulation and pre-academic activities. The educators in the two clusters that shared the aspect of in-service training reported to provide many more of these activities than the educators in the other clusters (strong effect sizes, based on the normative standard deviation), whereas in the cluster that combined in-service training with low experience, the provision of play activities was also rather high.

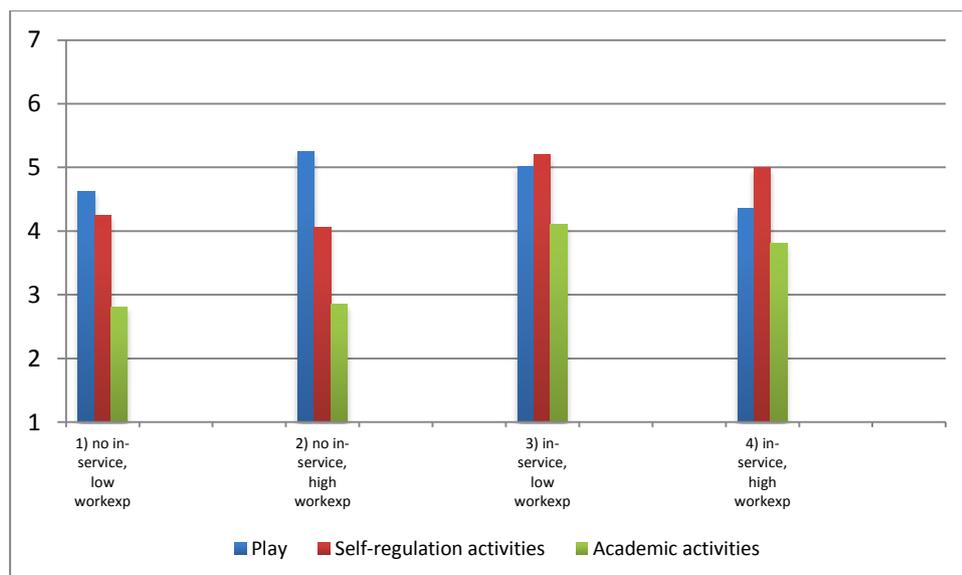


Figure 23 Four different types of additional in-service training (yes/no) and the amount of educators' work experience (below or above the mean) in centers for 0-3 year olds as related to curriculum

Second, likewise, we distinguished four different types based on educator reported provision of professional development activities in the center (based on aggregated classroom scores) and the overall organizational climate as experienced by the educators (based on aggregated scores below and above the reported mean scores). The first type was characterised by comparatively few activities for continuous professional development in the center (< 3.79) as well as a low overall organizational climate (< 4.71) (n = 3 classrooms). The second type of centers was defined by few professional development activities (< 3.79), but a higher overall organizational climate (> 4.72) (n = 3 classrooms). The third type was marked by more professional development activities (> 3.80) combined with lower overall organizational climate (< 4.71) (n = 3 classrooms). Finally, the fourth type reported a combination of more frequent professional development activities (> 3.80) and a higher overall organizational climate (> 4.72) (n = 4 classrooms).

We again related the fourfold typology to the provided curriculum. The results (see Figure 24) showed that in classrooms with fewer opportunities for professional development and a lower overall organizational climate, the educators reported more emphasis on the provision of pretend play. Self-regulation and pre-academic activities were provided the most in classrooms where educators engaged in professional development activities more frequently combined with a higher organizational climate (strong effect sizes, based on the normative PD standard deviation of .90).

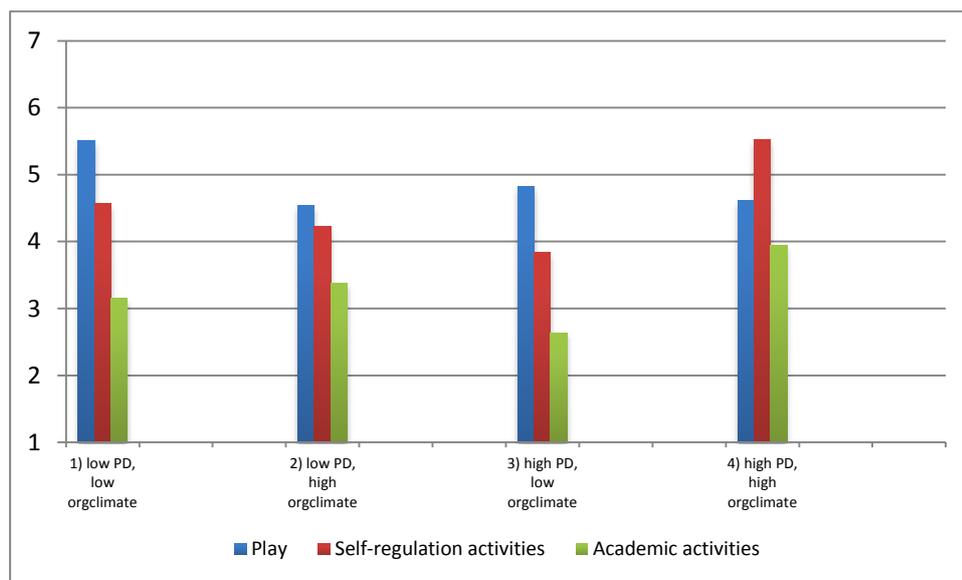


Figure 24 Four different types of professional development activities (below or above the mean) and overall organizational climate (below or above the mean) in centers for 0-3 year olds as related to curriculum

Centers for 3-6 year olds

First, for centers with 3-6 year olds also four different types were distinguished concerning educators' work experience (based on a mean-split of the aggregated classroom level score) and whether the majority of educators had attended any in-service training in the past two years (yes or no). The first type of centers was characterized by having educators with comparatively little work experience (< 14.50 years) and who did not attend any in-service training in the past two years (n = 2 classrooms). The second type of centers was defined by having educators with comparatively more work experience (> 14.51 years), but who had not attended any form of in-service training (n = 2 classrooms). The third type was marked by having educators with little work experience (< 14.50

years), but who did attend any form of in-service training in the past two years (n = 3 classrooms). Finally, the fourth type of centers was characterized by more experienced educators (> 14.51 years) who also had attended in-service training in the past two years (n = 5 classrooms). We again related the fourfold typology to the provided curriculum.

The results (see Figure 25) showed that in centers with more experienced educators who had attended in-service training the least emphasis was placed on the provision of pretend play compared to all other types of classrooms (very strong effect size). In the second type of classrooms, with more experienced educators who had not attended in-service training in the past two years, the provision of all type of activities was the strongest, and, in that, sense balanced. Also the educators in the cluster combining no in-service training and low work experience reported more balance in the provision of different activities compared to the educators in the clusters with in-service training.

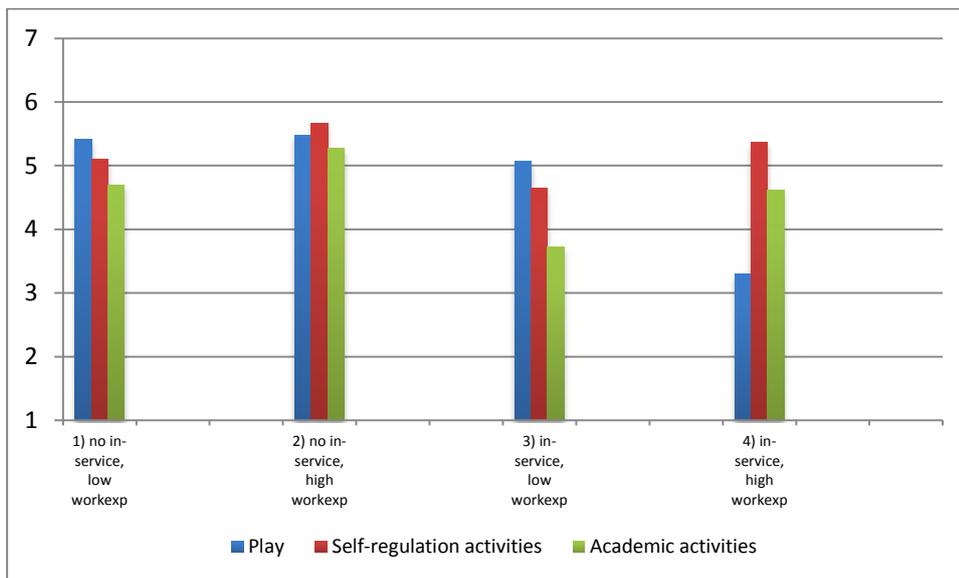


Figure 25 Four different types of additional in-service training (yes/no) and the amount of educators' work experience (below or above the mean) in centers for 3-6 year olds as related to curriculum

Second, likewise, we distinguished four different types based on educator reported provision of professional development activities in the center (based on the aggregated classroom score) and the overall organizational climate as experienced by the educators based on aggregated scores below and above the reported mean scores. In the first type of classrooms educators reported comparatively few activities for continuous professional development in the center (< 3.36) as well as a low overall organizational climate (< 4.82) (n = 4 classrooms). The second type of classrooms was characterized by comparatively few professional development activities (< 3.36), but with a higher overall organizational climate (> 4.83) (n = 2 classrooms). The third type of classrooms was marked by comparatively more professional development activities (> 3.37) combined with lower overall organizational climate (< 4.82) (n = 3 classrooms). Finally, the fourth type was defined by more frequent professional development activities (> 3.37) and a higher overall organizational climate (> 4.83) (n = 5 classrooms).

We again related the fourfold typology to the provided curriculum. The results (see Figure 26) showed that the least focus on the provision of pretend play occurred in classrooms with few

opportunities for professional development while having an overall higher organizational climate (very strong effect). The reverse pattern was also visible. The strongest focus on pretend play occurred in classroom with more professional development activities while having a lower organizational climate. The provision of pre-academic activities appeared to be the highest in classrooms with a combination of more professional development activities within a better organizational climate. The differences with the other types of classrooms are (close to) medium to strong, based on the normative standard deviation.

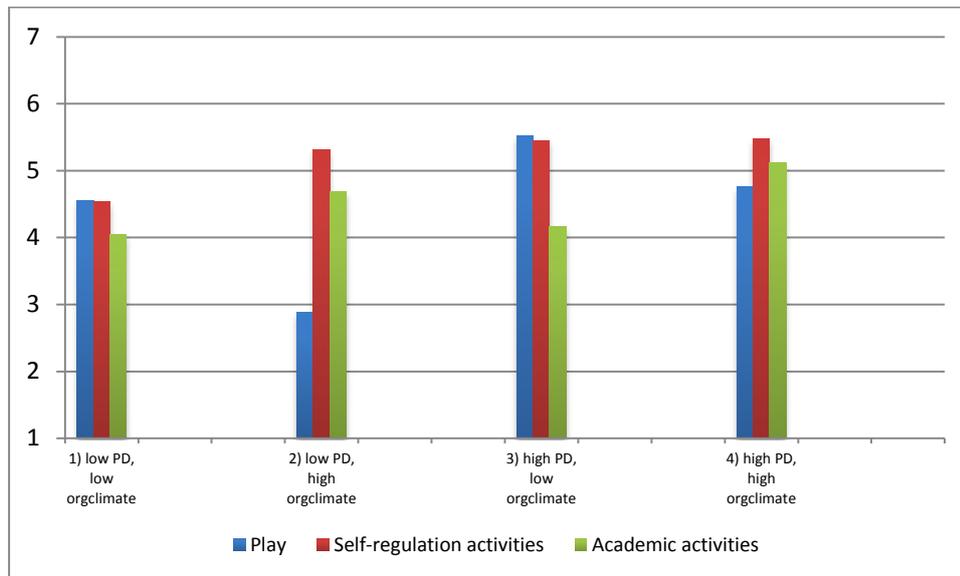


Figure 26 Four different types of professional development activities (below or above the mean) and overall organizational climate (below or above the mean) in centers for 3-6 year olds as related to curriculum

Overall, the findings for educators of 0-3 year olds showed that less experienced educators who had attended in-service training and worked in centers with more professional development activities and with a better organizational climate provided self-regulation and pre-academic activities most frequently while also focusing on pretend play, resulting in a balanced curriculum. Generally, the results for educators of 3-6 year olds revealed that more experienced educators who had not attended in-service training and worked in centers with more professional development activities within an overall, better, organizational climate reported the highest frequencies of the different activities and also seemed to provide these activities in a *balanced* way.

It should be noted that the findings represent the variation in the educators' characteristics and the self-reported curriculum of provided activities in the centers selected for the purpose of the current case study. The sample size of this multiple case study is small and the comparison of different types of constellations of characteristics is based on even smaller numbers of classrooms. Therefore, the results cannot be generalized beyond the participating centers and should be interpreted with caution. The differences in the curriculum of provided activities, as related to the educators' characteristics, were on average half a standard deviation or more, thus representing moderate-sized effects of the findings in the current sample and illustrate the complexities of relations between educators' characteristics and the curriculum of provided activities.

Relations between structural quality and curriculum

To gain a better understanding of the relations between structural aspects, such as group size and children-to-staff ratio, and reported curriculum we identified different patterns. We used the previously distinguished three types of activities: *play* (mean score based on the pretend play scale of all educators in the classroom), *self-regulation* (mean score based on the self-regulation scale of all educators in the classroom) and *pre-academics* (mean score based on the language, literacy, math, and science scales). We used the information from the educator questionnaire aggregated to the classroom level, as indicative of more stable information regarding the number of children enrolled in the classroom and the number of educators working in the classroom compared to the observed group size and ratio on the videotapes, as this may be confounded with specific circumstances (such as illness of educators or children or permission to be videotaped). Differences in types and how these are related to curriculum are only interpreted in case of medium sized effects or larger in terms of Cohen's *d* (based on the differences in means for the types and the normative standard deviation of .90).

Centers for 0-3 year olds

Based on the mean group size and mean reported number of adults, we divided the sample into four different types of 0-3 years old classrooms (N = 12, because there was missing information on either one or both of the variables for the other two classrooms). The first type of classrooms was characterized by a relatively large group size (> 15.60 children) and a large children-to-staff ratio (> 6.34 children per educator) (n = 3 classrooms). The second type of classrooms was defined by a comparatively small group size (< 15.50 children) but with a large children-to-staff ratio (> 6.34 children per educator) (n = 3 classrooms). The third type of classrooms was marked by a relatively large group size (> 15.60 children) and a relatively small children-to-staff ratio (< 6.33 children per educator) (n = 3 classrooms). Finally, the fourth type of classrooms was characterized by a small group size (< 15.50 children) and a small children-to-staff ratio (< 6.33 children per educator) (n = 3 classrooms). We related the fourfold typology to the provided curriculum.

The results (see Figure 27) showed that in small groups with small ratios there was more emphasis on pretend play at the expense of other types of activities (very strong effects, based on the normative standard deviation). Some further exploration of the data and field notes showed that two out of three of these classrooms characterized as small groups with a favourable ratios included infants in the classroom, which might at least partly explain the relative lack of self-regulation and pre-academic activities in these classrooms. Furthermore, in classrooms with a smaller group size, but with an unfavourable children-to-staff ratio, educators reported a stronger emphasis on self-regulation (medium to strong effects).

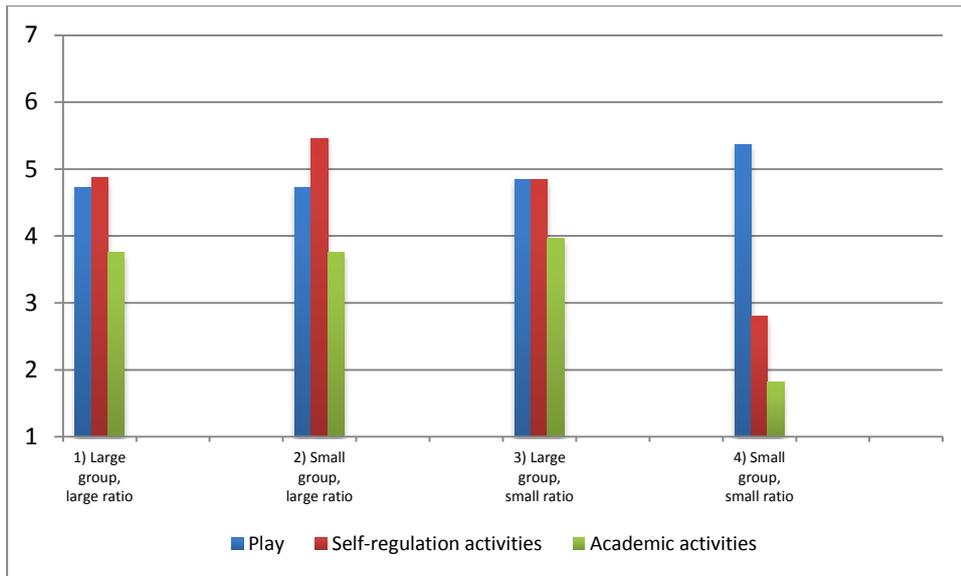


Figure 27 Patterns of quality based on different types of 0–3-years old classrooms in terms of group size and children-to-staff ratio as related to curriculum

Centers for 3-6 years olds

Likewise, a similar procedure was followed for the 3-6 years old classrooms based on the mean group size and mean reported number of adults (N = 13, because there was missing information for one classroom). The first type of classrooms was characterized by a large group size (> 25.00 children) and a large children-to-staff ratio (> 7.68 children per educator) (n = 5 classrooms). The second type of classrooms was defined as having a small group size (< 24.00 children) but with a large children-to-staff ratio (> 7.68 children per educator) (n = 3 classrooms). In the third type the classrooms were marked by had a large group size (> 25.00 children) and a small children-to-staff ratio (< 7.67 children per educator) (n = 1 classroom). Finally, the fourth type of classrooms was characterized by a small group size (< 24.00 children) and a small children-to-staff ratio (< 7.67 children per educator) (n = 4 classrooms).

Again, the fourfold typology was related to the provided curriculum. The results show (see Figure 28) a similar pattern as for the 0-3 year olds, although less pronounced. In classrooms with smaller groups and a favourable children-to-staff ratio the frequency of the provision of activities is, on average, lower, except for the provision of pretend play (strong effect sizes, based on the normative standard deviation of .90). Self-regulation activities were provided the most in classrooms with small group size but an unfavourable children-to-staff ratio compared to all other types of classrooms. Play was least provided in centers with a large group and large, unfavourable ratio (type 1), with the differences with other types being strong to very strong. There were no strong differences for the provision of pre-academic activities.

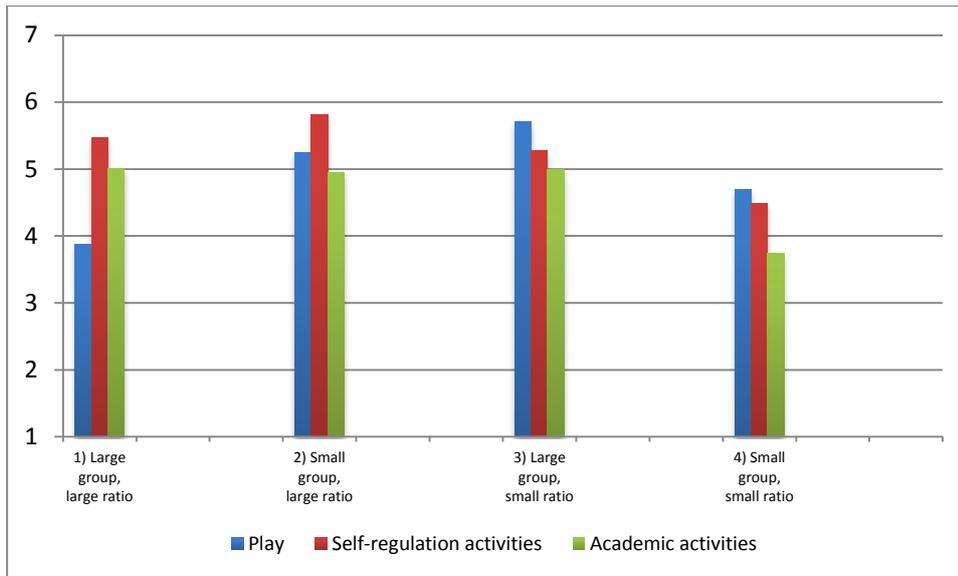


Figure 28 Patterns of quality based on different types of 3–6 years old classrooms in terms of group size and children-to-staff ratio as related to curriculum

Overall, the findings indicate that different combinations of structural quality in terms of group size and children-to-staff ratio in both 0-3 and 3-6 years old classrooms are related to different provisions of activities in the classroom based on educators reports. Based on the classrooms selected for the current multiple case study it appeared that educators who worked with smaller groups and favourable ratios provided less self-regulation and pre-academic activities compared to educators from the other types of classrooms. Educators working in smaller groups, but with unfavourable ratios reported more emphasis on self-regulation. Furthermore, the provision of pre-academic activities was reported the most frequently by educators with either large groups or unfavourable ratios or both.

It should be noted that the findings represent the variation in the classroom characteristics and the self-reported curriculum of provided activities in the centers selected for the purpose of the current case study. The sample size of this multiple case study is small and the comparison of different types of constellations of characteristics is based on even smaller numbers of classrooms. Therefore, the results cannot be generalized beyond the participating centers and should be interpreted with caution. The differences in the curriculum of provided activities found, as related to the structural characteristics, were on average half a standard deviation or more, thus representing moderate-sized effects of the findings in the current sample and illustrate the complexities of relations between structural characteristics and the curriculum of provided activities.

STUDY 4 - Educational Dialogue in 3–6 years old classrooms

Introduction

The aim of Study 4 was to identify educational dialogues from the video recorded activities to explicitly make the role of classroom talk more visible in the ECEC classroom interaction and to provide concrete examples of situations where educators are able to engage children to reciprocal sharing of ideas, and where educators are providing support for discussion by actively giving feedback and by encouraging children to participate in talk. Showcasing good educational dialogues can further concretize the good practices sought within the WP2 Multiple Case Study. The aim of the current study was approached with the following research questions:

- 1) What kinds of educational dialogues can be identified in the 3–6 years old ECEC classrooms during *educational/emerging academic activities* and *free play*?
- 2) How do educators' pedagogical practices support and enhance educational dialogues?
- 3) How do structured observed classroom quality scores reflect the similar characteristics with educational dialogues?

Method in Study 4

Two classrooms for 0–3 year olds (mainly serving children of 2–3 years of age) and two classrooms for 4–5 year olds (mainly serving children of 3–6 years of age) were recruited in each of the seven participating countries via deliberate selection i.e., along the particular set of criteria addressed in the WP2 Multiple Case Study Manual 1. Educational dialogues were identified from video recordings, which were derived from two different ECEC classrooms for *3–6 years old* classrooms in seven European countries. Videos classified as 'educational/emerging academic activities' and 'play'³ were selected to be analyzed for current Study 4. Video recordings that were classified as 'educational/emerging academic activities' (n = 14) included activities ranging from morning circle to outdoor excursion in nearby forest, indicating that educational/emerging academic contents are integrated to various set of activities within the classrooms for this age group. Video recordings that were classified as 'play' (n = 14) included different forms of play, ranging from educator facilitated role play to construction with blocks and playing outdoors (see Table 16 for detailed activity description).

Videos of educational/emerging academic activities and play situations were selected for this in depth inspection as they can be seen to provide somewhat different opportunities for educational dialogues to emerge. Videos of *educational/emerging academic activities* were selected to be analyzed within this study because previous research has mainly explored the dialogues within structured, educator-facilitated situations, where educational goals are set for the situation and interactions (e.g., Mercer, Dawes, & Staarman, 2009) and where the interaction provides ample opportunities for expanding learning via talk (Rasku-Puttonen, Lerkkanen, Poikkeus, & Siekkinen, 2012).

³ The video recordings were classified to the four types of activities by the national teams. In cases where national teams did not provide the specifying information the core team double-checked the classification.

Table 16 Description of activities and adult-child ratio in the activity

Type of activity	Adult: child ratio	Activity description
1. educational/emerging academic activities	5:26	Circle time: Singing songs together.
2. educational/emerging academic activities	1:5	Name recognition. Discussing names, going to school, food allergies etc. meanwhile checking the list of children being present that day.
3. educational/emerging academic activities	2:9	Making observations on spring (nature, science) and changes in nature while walking outdoors towards a forest excursion spot.
4. educational/emerging academic activities	1:7	Puppet theatre, going through a story (Three Billy Goats Gruff) together with the children with an aid of puppets.
5. educational/emerging academic activities	1:6	Making slime, scientific experiment.
6. educational/emerging academic activities	1:7	Making play-dough, scientific experiment, measuring.
7. educational/emerging academic activities	2:25	Preparing a mathematical guessing game.
8. educational/emerging academic activities	1:10	Making Nutella.
9. educational/emerging academic activities	1:16	Measuring water to bottles with measuring cups.
10. educational/emerging academic activities	1:10	Reading a story, associating story with different colored crayons.
11. educational/emerging academic activities	1:20	Morning circle, welcoming, reading and discussing a book.
12. educational/emerging academic activities	2:12	Science experiments: Tasting basic flavors, e.g., sweet & sour. Making a volcano experiment with chemical reaction.
13. educational/emerging academic activities	1:11	Science: Exploring flower parts and drawing the observations down to paper.
14. educational/emerging academic activities	1:14	Book reading. Re-playing the story through role play (children have role equipment).
1. Play	4:1	Free play outdoors: bathing and nursing baby dolls, talking about babies getting a chickenpox.
2. Play	1:3–7	Reading a book outdoors, play related to the story followed by a play with Barbie-dolls.
3. Play	1:3–4	Educator facilitated vet play. Children take roles as doctors and customers.
4. Play	2:11	Play at the yard. Children can freely choose their activities. Educators facilitate, aid and attend children's play.
5. Play	0:3	Children playing independently in the block area.
6. Play	1:7	Educator and children write a note, discuss a child's drawing and play a power ball game together.
7. Play	2:22	Children talk about driving a bike without stabilizers and practice driving a bike and balancing outdoors.
8. Play	2:6	Role play with clothes: Dressing up.
9. Play	0/1:4	Children play independently in the house play corner.
10. Play	1:2+2	Children are choosing activities they wish to do e.g., puzzle, playing with a dolls house. No adults present for most of the time.
11. Play	2:20	Variety of free choice activities recorded in the one classroom, e.g., exploring seeds, craftwork, playing with toys.
12. Play	1:13	Children making puzzles with wooden pieces, children playing in the home corner. No adults present/ interacting (observable) with the children for the most of time.
13. Play	1:11	Lots of play opportunities available for children. Educator approaches one or two children at a time.
14. Play	1:14	Puppet theatre, two boys playing with Legos.

Videos of *play situations*, on the other hand were chosen because oftentimes play situations are less structured and thus may allow more freedom for educators to interact with children and possibilities to open new avenues via talk. Children also may be more willing and 'free' to share their developing ideas spontaneously within a play situation. In addition, previous report from the CARE indicates that play is being strongly emphasized in the ECEC curricula across the Europe (Sylva, Ereky-Stevens, & Aricescu, 2015) as it is held as one of the most beneficial ways for children to learn. This further justifies selecting play activities as the second type of activity. On a final note, there seems to be particularly large variation in quality between educational/emerging academic activities and play situations especially on the CLASS Pre-K (Pianta, La Paro, & Hamre, 2008) dimensions of Instructional Support which further endorsed choosing these activities for closer inspection.

Data analysis

In this particular analytical approach, we followed the principles of theory-driven qualitative content analysis (see Patton, 2002). According to Patton (2002), qualitative content analysis is used to reveal predominant phrases, concepts, and core meanings in text documents and is appropriate to various types of qualitative data and depths of interpretation (Graneheim & Lundman, 2004). Even though the analytical process was theory-driven process in principal—guided by the theories about dialogical teaching—a promise of data-driven processes was maintained. Educational dialogues have not been investigated amongst children so young and it could have been possible that the pre-existing sets of criteria—determined for the educational dialogues by several authors—may be too demanding considering the developmental stage of the children.

The analysis proceeded in three stages. In the first stage of the analysis, the data were first screened in order to identify the potential episodes including educational dialogue and to determine their boundaries. This required watching the video tapes repeatedly, with explicit focus on talk between educators and children. All of the video recorded interactions were not included to the analysis. Videos (or parts of the videos) where there were no educators present during the recording and where discussion did not remain in depth in one certain topic were excluded from the analysis. This is justified also in relation to the results of Study 1 in this report, which suggest that instructional support is of higher quality (as measured with the CLASS Pre-K) when there are educators present in video recorded situations.

Within this study we defined the episode of educational dialogue as a segment of an extended exchange between the educator and children, in which the topic continued essentially the same. Further, each episode must manifests three of the five principles of dialogic teaching (Alexander, 2006); i.e., **purposefulness** (educators plan and steer classroom talk with specific educational goals in mind); **collectiveness** (educators and children address learning tasks/topics together as a small group or as a the whole classroom) and **reciprocity** (educators and children listen to each other, share ideas and consider alternative viewpoints). Choosing to use three criteria instead of all five suggested by Alexander (2006) is founded on the previous study by Muhonen et al. (2016), who state based on empirical evidence that even with 6–8 year old children it is difficult to reliably extract solid evidence for supportiveness and cumulateness at the level of transcripts. Thus, these criteria were also not considered while analyzing the data for this study concerning slightly younger children. During the first phase of the study the aforementioned criteria suggested 20 potential interactional episodes of different lengths. These episodes were analyzed with guiding questions such as: What kinds of questions educators ask? How often educators ask children to explain their ideas further? How long

are the turns of educators and children? Is there a balance between the amount of educator talk and children's talk? How many children are engaged to the educational dialogue?

According to criteria for educational dialogues **8 episodes of educational dialogue** were identified from 28 activities (14 educational/emerging academic activities and 14 play activity). The second stage of analysis concerned these 8 episodes of educational dialogue identified in stage one. Within the second stage of analysis the existing episodes of educational dialogue were analyzed regarding the functions of talk and pedagogy within educational dialogues. By this we mean the pedagogical strategies that educators used to support children's active participation and shared understanding through talk (Muhonen et al 2015; Pianta, La Paro & Hamre, 2008). Such strategies include educator's initiations, responses, elaborations/expansions, feedback, generalizations, argumentative comments and summaries as well as their pedagogical choices regarding the practical arrangements and infrastructure for facilitating the dialogue.

Finally, the parallel with the CLASS Pre-K (Pianta, La Paro, & Hamre, 2008) scores were checked with respect to overall CLASS score means for the videos from which the educational dialogues were derived and contrasted with CLASS score means derived from video recordings where there were no educational dialogues identified. The CLASS scores were checked only after finalizing the selection of educational dialogues. Dialogical interactions are theoretically associated with certain CLASS dimensions of Teacher Sensitivity and Regard for Students Perspectives to establish the theoretical foundation for educators' awareness toward children's needs and initiations during dialogical interaction as well as for enabling children's participation and allowing their perspectives, initiations and ideas to emerge and to be integrated to the entity of discussion. On the other hand dimensions of Concept Development, Quality of Feedback and Language Modeling encompass the more cognitive and verbal premises for facilitating and maintaining classroom talk. Educators need to be able to provide verbal support for discussions to meet the criteria of educational dialogues and this is done by constructing interactional loops in which educator's and children's turns are altering and where educators encouragement and verbal support (e.g., prompting, elaborate language) for discussions are present (Pianta, La Paro, & Hamre, 2008). The purpose of this stage of analysis was to complement the qualitative analysis by showing descriptive reflections between a structured observational instrument and more detailed qualitative analysis, rather than exploring systematically the parallel between CLASS and educational dialogues. This is also why CLASS score means were used to elaborate the findings.

Due to the layered structure of the CLASS instrument (i.e., three broader domains; 14 dimensions defining each of the three domains; several indicators further defining each of the 14 dimensions), mean dimension scores (ranging from 1–7⁴) and the indicator level mean scores (ranging from 1–5⁵) from videos including educational dialogues were contrasted with CLASS mean dimension scores and mean indicator scores derived from video recordings where there were no educational dialogues identified.

⁴ Scores 1–2 represent low, 3–5 mid-range, and 6–7 high classroom process quality.

⁵ 1 = low-range; 2 = low/mid-range; 3 = mid-range; 4 = mid/high-range; 5 = high-range.

Results of Study 4

The number of educational dialogues was modest (8 activities out of 28) and they were identified mostly during videos recorded from educational/emerging academic activities (see Table 17). What is also worth mentioning is that educational dialogues were identified more often during educational/emerging academic activities including science or math, rather than language and literacy. Further, equal number of educational dialogues emerged amongst activities organized in small group activities (i.e., educator(s) and fewer than 8 children) and in large groups (i.e., educator(s) and more than 8 children). What is noteworthy, however, is that in most cases all children in the group were not equally active in participating in the educational dialogue. The number of children actively contributing to educational dialogues ranged from 2 to 8 children per episode (see examples 1–6 for details). When an educator was talking to a single child in a group situation without actively engaging other children in the discussion and without other children showing active interest in participating to discussion, the situation was not considered to foster an educational dialogue.

Table 17 The episodes of educational dialogues by activity

Educational /emerging academic activities	Science Large group 2:9 Age range 3–6 <i>'Spring observations'</i>	Science Small group 1:6 Age range 4–6 <i>'Making slime'</i>	Math Large group 1:16 Age range 4–6 <i>'Water experiment'</i>	Science/Literacy Large group 1:11 Age range 5–6 <i>'Examining flower parts'</i>	Math Small group 1:5-8 Age range 4–5 <i>'Number guessing game'</i>
Play	Play Small group 1:7 Age range 4–6 <i>'Free play; shared discussion; playing a game'</i>	Play Large group 2:22–25 Age range 4–5 <i>'Driving without stabilizer discussion and trials outdoors'</i>	Play Small group 1:4 Age range 3–4 <i>'Free play; bathing and nursing baby dolls'</i>		

Educational dialogues taking place during play activities were more often initiated by children while educational dialogues taking place during educational/emerging academic activities were more frequently initiated by the educators. During the educational dialogues taking place during play situations, educators were more often observed being away from children on the focus of video (e.g., circulating between play areas, talking to children for brief moments) than during educational/emerging academic activities, which may have had a direct effect on why educational dialogues could not be identified that often. Further, the interaction between educator and children were often facilitated in order to enrich play or verbally label what children are doing, rather than having a clear focus on expanding shared understanding via talk over an extended time period. This may indicate that play situation is being regarded as children's own time which educators put developmental value on: children are able to determine what they wish to do also on their own.

Episodes of educational dialogues varied both with respect to length and depth of the discussion. In the following chapter five examples of educational dialogue are provided through which the unique

educational dialogues are being showcased. After each excerpt closer attention is being paid to educators' ways of supporting dialogues (i.e., functions of educator's talk and pedagogical choices).

Examples of educational dialogues

With response to first research question, five examples of episodes of educational dialogues are being introduced within this chapter. Three of the introduced episodes took place during educational/emerging academic activities and two episodes took place during play situation. In the transcripts given as examples the following entries are being used:

- E = Educator's line;
- CH = Individual child's line if a child can't be identified;
- C1, C2... = Child's line when the child can be identified;
- CA = Many children together;
- () = inaudible word(s);
- (word) = unclear utterance;
- (()) = researcher's addition; --- part of the transcript is left out;
- * word * = whispering.

After each exemplary episode, functions of educator's talk and pedagogical means of enhancing the particular educational dialogue are being addressed more closely as a response to the second research question.

Educational/emerging academic activity (Science): "Making slime"

Example 1 introduces approximately 3 minutes long educational dialogue where the educator and 6 children are working around the table with a scientific experiment of preparing slime in a glass jar with different ingredients. The recipe with pictures on it and the required ingredients are on the table and they aid children to discover how the work proceeds. Educator allows significant amount of freedom for children to prepare the experiment themselves. She approaches the situation by asking children how to go on and what to do in order to make slime and eventually allows children to mix the needed ingredients themselves. This educational dialogue took place over the extended discussion while starting the work with preparing slime and into which particularly three children were actively engaged.

Example 1 "Making slime"

- | | | |
|----|----|-------------------------------------------------------------------------------------------|
| 1 | E | ---what are you trying to do from the recipe? What will it be when it's done, down |
| 2 | | there? |
| 3 | | C4: <i>Slime</i> |
| 4 | E | Slime |
| 5 | C1 | <i>There, that (). This here I think, or, this</i> |
| 6 | | --- |
| 7 | E | Do you still remember what this is? |
| 8 | C5 | () |
| 9 | E | That is this here. Exactly. |
| 10 | C1 | <i>Breadflour ((Bean gum)).</i> |
| 11 | E | Breadflour ((Bean gum)) Exactly. Locust bean gum that is. |
| 12 | C4 | <i>My mum also has it at home.</i> |
| 13 | E | What does she do with it at home? |
| 14 | CH | <i>Dough.</i> |

- 15 C4 () what mum does with it. But I also once (suggested slime)
- 16 E **Where do you have it? Do you have it at home in your room?**
- 17 C4 No.
- 18 E **Or in the bathroom?**
- 19 C4 We have it.
- 20 ---
- 21 C4 In the (cupboard).
- 22 E **And what else is there in the cupboard? Wait a second, we want to find out first for what you have the locust bean gum at home, lot of people have it at home.**
- 23
- 24 C6 To, to make soup, soup, soup, soup. () For soup.
- 25 E **For soup and gravy.**
- 26 C4 () You can put something in there and then stir around and then ()
- 27 E **Exactly, if it is too thin you can stir it in and then it turns a little thicker. Excellent.**
- 28 C4 Yes.
- 29 E **Excellent.**
- 30 C4 Was it one spoon?
- 31 E **One and a half. One very thickly heaped and then another one because you are making three portions. *Come, I will move this*.**
- 32
- 33 C4 Like this?
- 34 E **Mhm.**
- 35 C1 What are three portions?
- 36 E **Three portions of slime.**
- 37 C Slime.
- 38 C1 But, eh, is it only enough for three people?
- 39 C4 (For lots).
- 40 C1 No.
- 41 C1 (No, no, no). You have to watch out that ()
- 42 C6 Why does it even have to be sieved through?
- 43 C1 So that it doesn't turn into big clumps.
- 44 ((Educator nods))
- 45 C4 So that it doesn't turn out too thin, so that we have it nice and thick.
- 46 E **Yes, so that we have it nice and thick and that we really don't have any clumps in there. We can't get away the clumps later on.**
- 47
- 48 C5 What do you need the bread flour for?
- 49 C1 So that it thickens. Otherwise () the slime stays liquid.
- 50 C4 ()
- 51 E **At the end the water should turn into a slime, that doesn't, that sticks together, right.**
- 52 E **A little bit less, I think, otherwise it gets too thick.**
- 53 E **Yes, like that is great.**

Educator and children advance in preparing slime phase by phase according to the recipe.

In this particular episode children are giving suggestions on what the ingredient in slime is called and on lines 8 and 10 two children are providing their answers to the educator's question. Particularly noteworthy is how the Child 4 (line 12) makes an initiation by adding a new perspective to the discussion by sharing a personal experience related to the topic. This indicates child's active processing of the ongoing topic. The educator validates the initiation and responds with a question which expands the topic. She further shows persistence with the new strand of thought on lines 22 and 23 emphasizing and validating that child made an important note. On line 38–45 children are independently exchanging ideas and answer each other's questions which then re-occur on lines 48–49, which alongside child's initiation on line 12 suggest a child-initiated pattern within this educational dialogue. Educator makes a summary on lines 46–47 and validates children's responses and thus aids the discussion to remain on the subject. In the case of this educational dialogue, hands

on materials aided children's participation and discussion circulating in a familiar topics (e.g., what bread flour is used at home) increased their opportunities to reflect the topic through their own experiences. The educator was taking a role of a facilitator instead of a leader of the discussion. The educator withdraws on lines 38–45 and children's reciprocal comments relating to topic receive more space. The educational dialogue ends with the educator's summary and encouragement for the children. This episode provides and an example of educator-initiated educational dialogue where the educator leads the discussion while allowing children's initiations and integrating them to further discussion.

Educational/emerging academic activity (Math): "How many cups of water fit into the bottle?"

Example 2 is representing an educational dialogue that was observed during a math related circle time and which lasted approximately 12 minutes. During the activity there is the educator and 16 children present. The topic of the session is about pouring water with measuring cups to bottles of different sizes to fill them up. The more precise focus is jointly estimating how large a measuring cup to use and why and how many cups will fit into the bottles on display. Even though there are 16 children present, the educator skillfully engages several children to discuss and explore the measuring procedure: with certainty, at least 8 children are actively taking turns across the episode. Educator is using hands on material that both she herself and the children are using in turns. As is the case also within the educational dialogue presented in the previous example, this discussion draws from the concrete hands-on activity, but also via educator's talk that supports verbal exchange.

Example 2 "How many cups of water fit into the bottle?"

1 **E** **Alright, I'm so thirsty! I only just want these bottles filled with good nice water, but I**
 2 **don't want the same amount in every bottle. --- But I have another problem. Because if**
 3 **when I pour water in the bottle later, then I will spill it. I need what we have in the**
 4 **sand table. Do you know what that white thing is called? The one we always put in the**
 5 **bottle?**

Discussion about what a funnel is and how it works and about the size of the measuring cups.

6 **E** **Hey (2) CA how are the measuring cups standing now? They stand from...**
 7 **CH** **Big to small.**
 8 **E** **Okay super. The smallest one stands all the way here. If I want to put water in here**
 9 **and I want to fill this bottle... with my little cup. Is it then done quickly?**
 10 **CA** **No.**
 11 **E** **Why not?**
 12 **CH** **It is too small!**
 13 **E** **It is too small. Now you see me, I see you well. CA if I put this in it, will it then take**
 14 **long before the bottle is filled?**
 15 **CA** **Yes. ((Majority of the children))**
 16 **E** **Why do you think yes, C8?**
 17 **C8** **Because it is a small one.**
 18 **E** **Right. What can I do better?**
 19 **C8** **A big one! ((Child points to the biggest cup))**
 20 **E** **This one?! What are you thinking?**
 21 **CH** **No, then it goes very much.**
 22 **E** **Then it will maybe....? Spill over, right? I think it's a good idea when you just join in**
 23 **quietly? Otherwise the bottles will fall.**

Educator shares few turns with children about filling the bottles and everyone paying attention.

24 E *Boys and girls, we're going to begin. I choose this one (measuring cup) today. I've*
25 *heard from you "with the big one it will perhaps spill over and with the small one*
26 *we're busy for a long time." School is over at 12:30 pm so... You are going to help me to*
27 *see how many of these measuring cups you think will fit in this bottle. First watch. I*
28 *fill it with water, put it on the funnel.*

29 CH *No, not enough.*

30 E *Ssst. Go, no, no. I know you want to help. You may help me in a minute. Silent finger.*
31 *How many do you think will go in here, in this bottle. How many? There is already....*
32 *one in? How many, do you think, will fit in additionally? Try to estimate. C10?*

33 C10 *Another two in addition.*

34 E *You think another two in addition. Who thinks that too? What do you think?*

35 C11 *I think another three.*

36 E *You think another three. C13?*

37 C12 *Many.*

38 C13 *Three.*

39 E *You also think three.*

40 C9 *Eight.*

41 E *You think that another eight of these cups will fit in? There's already one in it, right?*
42 *And it's already till here.*

43 C9 *Two.*

44 E *Good. We're going to see who's right. Two kids or the three kids. And for now I will*
45 *still do it by myself, but that will end soon. Look it has a beautiful spout. You can pour*
46 *nicely. That's two. Do you still think that only one can be added? What do you think?*
47 *Who thinks that another two can be added? Okay ssst. Hellooo, bingo!*
48 *You're very enthusiastic, but actually I want the silent finger now,*
49 *because otherwise it will be a real henhouse (language specific expression; unquiet,*
50 *too noisy). There are two cups added. Fingers up of the children who think that*
51 *another two can be added. 1, 2, 3, 4, 5, 6 children think that. Who thinks that another*
52 *three cups will fit in? 1, 2, 3. The rest doesn't have an opinion. C14? What do you*
53 *think?*

54 C14 *I think that... another two.*

55 E *Another two. We will see. Two are in. We have this number (puts two fingers in the*
56 *air). Silent finger. Discuss.*

57 CA *Quiet!!*

58 E *How many are in?*

59 CA *Four!*

60 E *Who is right?*

61 CA *Me!*

62 E *((A little scream)) Good! But boys and girls, we have another one (bottle). Well. What*
63 *do you think? I want a silent finger. You may sit, dear. The funnel has to be on the*
64 *other bottle, of course. Uhh ... how many cups you think will fit in this bottle? What*
65 *does... C7 think?*

66 C7 *Four.*

67 T1 *Allright, you may leave them there, I just said. We use, of course, the same cup.*

68 CA *Hello.*

69 E *Hello. Who thinks that four will fit in? Nobody. Who thinks five will fit in? 1, 2, 3, 4, 5.*
70 *Who thinks six cups will fit in? 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 children think that six will*
71 *fit in.*

72 *Alright assistant, now you may. Come. CA may put the first cup in the bottle. And*
73 *we are going to listen to the sound of the pouring, and this one is ready. Closer. Pour.*

74 CA *One.*

75 E *Another one. Pull up your sleeve, dear.*

76 C2 *Yes that will make your T-shirt wet.*

77 CA *Twooooo.*

78 E *You think six, right?*

79 CH *Yesss.*

80 C11 *I think eight.*

81 E **Ssst. He goes on. Just look at CA. CA look.**
 82 CA *Thrrreeee.*
 83 E **Alright, just think, in your head. We have three now, darlings. Stop! Who thinks that**
 84 **another one will fit in now? Fingers up. Who thinks one? What a consensus. Sit down.**
 85 **We're going to see if you are right. If you're good at math. I'm not very good at that.**
 86 CH *Not so many.*
 87 E **Don't get him out of his concentration. How many are in? Well? How many are in**
 88 **there?**
 89 CA *Five!*

This example illustrates how a learning situation within a large group format can also be participative for children. Even though the discussion follows rather systematically initiation-response-feedback (I-R-F) pattern by form, e.g., the educator expects factual answers (line 58). The educator however consistently breaks the pattern toward enabling children's participation in this educator initiated educational dialogue. This is apparent throughout the episode as the educator uses questions which invite children to take more active part and justify their points of view (e.g., lines 20, 22, 32, 51–53). Comments like 'who thinks that another one will fit in?' or 'what do you think?' make it clear for the children that their perspectives are valued and answers (or reactions) are anticipated. Raising fingers or just indicating thinking in their heads engages children to actively listening and having a sense of the consequences in the experiment (e.g., lines 83–85). Educator's use of talk includes particularly many inquiries (e.g., line 6) and feedback (e.g., line 18) but also elaborates/provides information (e.g., lines 31–32).

Educational/emerging academic activity (Math): "Mathematical guessing game"

Example 3 includes an educational dialogue that includes many phases of work over a 24 minute period but during which the children are involved in the same topic. The educator and 5 children start working with a mathematical guessing game by choosing what kind of display of the secret number they wish to construct. The idea is to draw and make a countable display out of materials available that each present the same number (i.e., number 12 in this case). After making the displays, three children are invited in to count the items on display and then guess what the hidden number was. All the phases of work are constructed on children's active role both attending the activity and to share their opinions about how to proceed. The educator is guiding the frame of the activity, but children make suggestions and determine the materials and number as well as which display they are going to show to their friends jointly by having an educational dialogue.

Example 3 "Mathematical guessing game"

1 E **Ok, so if we want to prepare a mathematical guessing game. What do you have to do?**
 2 C17 *We have to prepare all the numbers*
 3 E **So then what do you say if we prepare the guessing game, what could we do?**
 4 C3 *With like shells, with felt tip pens, with stones*
 5 E **Ok, did you hear C3? She told you that you can do it with bottle tops, shells,**
 6 **therefore with all these materials and it will become a guessing game with materials**
 7 C3 *With pencils and with other things, these are ours*
 8 E **Those are yours, because how would you like to do it?**
 9 C3 *With drawings*
 10 E **With drawings, perfect**
 11 C24 *I would like to do twelve*
 12 E **Mmm you're right now we also need to decide the number to hide.**
 13 C3 *I have already chosen it*
 14 E **Then wait a moment because the number to hide ought to be the same for everyone**

15 **and only we know it. So that when we call our friends to guess we will keep it a secret**
 16 **and they have to come here look the drawings look at the compositions and try to**
 17 **understand it ((Guess the number hidden to the composition))**
 18 **E Would you like to do it easy or difficult first?**
 18 CA Difficult
 19 C3 Easy first
 20 CA Difficult first
 21 **E well then, shall we do it difficult seeing as they are all agreed? What do you say**
 22 **C23? Is twelve ok to you?**
 23 C23 Yes
 24 **E That's good then! ---**
 25 C18 But we already did it the other time
 26 **E Yes that's right, but we can do it again, and then call different friends**

Children start working with the displays by drawing and gathering displays. Educator aids in the process.

27 **E We'll put them here ((drawings)) so they can look at them. Because while you were**
 28 **working, they were working too and they didn't see them. What do you say children?**
 29 C24 For me C3's is beautiful
 30 **E You like it. But in your opinion, all of your opinion... which among your compositions**
 31 **and these drawings, which one will be the most difficult for your friends to guess?**
 32 C23 C3's one (points to drawing).
 33 C24 In my opinion, our composition!
 34 **E How is that?**
 35 C17 In my opinion that one there (points to composition)
 36 C18 In fact this one is too much (pointing to a composition made of wooden sticks)! In
 37 fact this one is too difficult as well! And this one with the shells on top.
 38 **E Why do you say that this composition is more difficult?**
 39 C17 Because it is one on top of the other
 40 **E Ah, so there it is little bit hard to count them right?**

Children have invited their friends to start figuring out the math riddle, children are aiding their friends to resolve the hidden number.

41 C23 ((Counts form one to twelve))
 42 C10 I said six
 43 **E He says six**
 44 C23 ((Counts one till nine))
 45 C3 No, you have skipped two C23 ((child says to another))
 46 **E Wait then C23. Remember the number you wanted to hide, don't invent another one**
 47 **because otherwise we won't be able to understand**
 48 C19 Nine, ten, fourteen, sixteen
 49 C23 No but we don't count like that!
 50 **E We don't count like that**
 51 C10 I made six
 52 **E He says there are six**
 53 C23 You don't count like that
 54 **E So then... do you want to help him because he still has to learn well how to count that**
 55 **far?**
 56 C23 ((Counts from 1 to 12 by pointing to the figures on paper with her finger))
 57 C10 ((Counts from 1 to 5 by pointing random squares on the paper with his finger))
 58 C23 You skipped one
 59 **E Because C23 put his finger right on all ((the drawn shapes))**
 60 C24 ((Takes child C10's finger to her hands and moves the finger as she counts aloud 1-
 61 12))
 62 C23 Then the drawing with little balls which is even more difficult!
 63 C24 ((Takes again child C10's finger to her hands and moves the finger as C23 and C10
 64 count aloud from 1 to 12))

- 65 **E** **Ah so, then what is the hidden number in your opinion?**
 66 C10 12
 67 C23 It's 12
 68 **E** **Is it 12 C23?** ((C23 nodding))

Within example 3 it is possible to see the children taking active part in educational dialogue that extends over a long period of time. The interaction is structured around the educator asking questions and children providing answers, but children are adding actively new themes to the topic. For instance, in lines 11 and 18 children are adding important perspectives independently. The educator validates the comments and allows the discussion to follow children's initiations. The educator asks children's opinions and uses lots of open questions to which each child is able to produce an answer e.g., on line 28 "What do you say children?" The educator is also asking children to justify their perspectives (e.g., lines 34 and 38) by asking an open ended question. When contrasted with the educational dialogue in example 2, similarities in the educators' ways of engaging children in dialogue are apparent even if the task and group format are different. Both educators use lots of questions that are intended to keep children engaged and follow the experiment with more children present, but with the smaller group, the educator's questions evoke longer responses from the children.

Children's active initiations on lines 11 and 18 as well as the problem solving phase on lines 41–68 (includes children aiding each other without educator explicitly encouraging them to do that) provide evidence of this educational dialogue representing a pattern of child-initiated dialogue: children can be seen to add relevant content and jointly build up shared understanding over resolving the mathematical guessing game.

Play activity: "Bathing baby dolls"

Example 4 introduces a free play situation where there were 4 children and an educator present. The children are playing with dolls in an outdoor area where there is a table and a bathtub as well as some nursing equipment available (e.g., soap, towels, nappies, cotton pads etc.) for the children to play with. The educator is facilitating children's play and discusses with children during the play. She is following children's lead as the play situation evolved. The following educational dialogue (initiated by a child) lasted for approximately 7 minutes and there were two children showing particular engagement while taking part on the discussion.

Example 4 "Bathing baby dolls"

The educator is seated on the ground next to a table on top of which two children are nursing baby dolls. The educator advises them in bathing and drying the babies with a towel. The educator and children exchange turns about how to bath the babies and how to dry them.

- 1 C1 My baby has the chickenpox
 2 **T** **Oh no! You have to wrap her warmly**
 3 ((educator talks to two of the children about attending the baby))
 4 C2 Oh no! My baby has got the chickenpox as well!
 5 **E** **Oh no! What shall we do to make her better?**
 6 C1 You have to () with cotton wool on the spots.
 7 **E** **Oh. Have they got spots? Have yours's got spots?**
 8 C1 Yeah.
 9 **E** **Oh, C1 tell them what to do**

- 10 C1 You'll have cotton pads and you will tap them on the spots. (). That could be
 11 special cream.
 12 E I like the way you are drying the baby. Mhm, you are drying them. Dry the legs. That's
 13 it.
 14 C3 She has got chickenpox in her legs as well! ((Child speaks excitedly))
 15 E Well they come out everywhere. Tap them away like C2 told. Is it helping?
 16 C3 Yeah
 17 E Do you think it needs some medicine or maybe some water?

Educator and children discuss whether the babies are thirsty and if they should drink some milk and how the children are taking care of the babies. Children apply 'special cream' with cotton pads on the babies skin and put nappies on them.

- 18 E You are really nicely looking after that baby C2! (3) Are her chickenpox gone?
 19 C2 Uhm. No
 20 E And what about yours C3? Are the spots gone yet?
 21 C2 ((talking lengthy but unintelligibly with the educator))
 22 E How long does it take to make him better? What do you think?
 23 C2 () one day and she will sleep there
 24 E And when she wakes up will she be better?
 25 C2 Yeah (10)
 26 E You are doing it very well, I think she likes it, it makes her feel better

The situation continues with one-on-one interaction between educator and C2 on writing a pharmacy prescription for a medicine to chickenpox. Later on also C3 joins the writing. Focus shifts to writing letters.

This example showcases nicely how a play situation fosters a child initiated educational dialogue. The educator is listening to children's initiations during the free play with babies and when the C1 on line 1 exclaims that her baby has the chickenpox, the educator notes the child's comment but does not aim to bring it further. Instead, it is another child's (C2 on line 4) initiation that triggers the educator to expand the topic via open question. The educator asks children many questions related to having the chickenpox and children insert their ideas and alter their play along them. What is different within this educational dialogue, compared to the ones taking place during educational/emerging academic activities, is that children's verbal turns are somewhat shorter and they are expressing their turns also via play procedure. The educator's initiations are serving the purpose of maintaining the verbal exchange during play (avenue for learning more about mending chickenpox). E.g., educator's questions on lines 20 and 22 are serving this purpose. On the other hand, educational dialogue is used also as a tool of enriching the content of the play along children's terms (e.g., line 9). The educator supports the dialogue and engagement with the topic as she later returns to the topic with follow-up questions on lines 18 and 20.

Play activity: "Birthday"

The example 5 introduces an episode of a child initiated educational dialogue taking place during a free play situation. During the free play time the educator moves in the classroom along with children's initiations (e.g., aiding one child to write a note and sign it, talking about one child's drawing and playing a board game with the children) and the educational dialogue presented below spontaneously emerges as the educator sits on a chair with one child in her lap. The educational dialogue is rather short by nature, lasting approximately 6 minutes. The child who makes the initiative comment is speaking outside the frame of the video. Furthermore, some children are

making verbal comments outside the camera also later on, thus it is not always clear how many children take part in the educational dialogue, but at least three children can be identified having an active role with certainty.

Example 5 "Birthday"

- 1 CH ((child from outside the camera calls the educator by name))
2 E **Yes.**
3 CH *Today in our game it's your birthday.*
4 E **Have you already prepared something?**
5 CH *We are doing it now.*
6 E **You are doing it now. How old am I turning?**
7 C1 *A hundred.*
8 C5 *No.*
9 E **A hundred?**
10 CH *How old are you actually, T?*
11 E **In reality or in the game?**
12 CH *In reality.*
13 E **In reality I am thirty-four. But then I already have a mum age. If I'm supposed to be a friend, then I have to be a little younger maybe.**
14 C1 *Friend.*
15 E **Friend.**
16 CH *No, you are a mum.*
17 E **A mum. Ok. And who are you? My children?**
18 CH *Yes.*
19 CH *How old are you?*
20 E **In reality I am thirty-four.**
21 CH *My mum is also thirty-four.*
22 C6 ((comes towards)) *My mother is also thirty-five. My mother is also thirty-five.*
23 E **Very very similar yes.**
24 CH ((from off)) *And today you are turning thirty-three.*
25 E **Today I'm turning thirty-three, ok. [Then I'm the same age as your mum.]**
26 C1 *If you are thirty-four. If you are thirty-four in reality now, then you are older than my parents because they are thirty-three.*
27 E **Mhm. Then they are one year younger than me.**
28 C1 *Yes.*
29 E **Are they both thirty-three?**
30 C1 *Yes.*
31 E **Aha.**
32 C1 *But mum still older and his sister too. His sister is the same age as you actually.*
33 E **Oh. Good. Then they are very close together age-wise aren't they?**
34 C1 *Mhm.*
35 E **Mhm.**
36 C5 *[Do you know what? These are green tulips.]*
37 E **Do I have to write you invitations?**
38 CH *No.*
39 E **No. Ok.**
40 CH *We are your children.*
41 E **Oh, you are my. Ok, that is true. You don't write your children invitations.**

Educator continues casual talk about C5's drawing and C1 feeling dizzy for 3 minutes.

- 44 E **How long do you still need for the birthday?**
45 CH *Not so long anymore.*
46 E **Not so long anymore. Is the cake in the oven already?**
47 CH *No, not yet.*
48 E **No.**

49 C5 ((calls educator by name)).
 50 E **You have to turn up the oven real hot so that the cake bakes quickly. Because we don't**
 51 **have that much time left anymore before we have lunch. If you want to celebrate the**
 52 **birthday before.**

This example introduces a child initiated dialogue which begins casually by child's spontaneous initiation (lines 1 and 3) which the educator validates and elaborates (lines 4 and 6). These educator's turns indicate to children that she is hearing children's developing idea and supports the play. The educator further follows children's developing ideas and adds both expansions (e.g., lines 13–14) and follow-up questions (e.g., lines 44 and 46). The follow up questions within this educational dialogue were used to elaborate children's play on the verbal level, but also as an organizational practice to provide a heads-up and make it clear for the children that the playtime would soon be over and that children should "wrap up" the play before lunch. The educator's comment on lines 50–52 also serves the purpose of making a summary of the dialogue.

Thus, what was common for both educational dialogues taking place during play situations (examples 5 and 6 introduced above) was that they were shorter (i.e., lasting for shorter time) than the ones taking place during educational/emerging academic activities. Further, the educational dialogues taking place during play situations were also less elaborated than the ones taking place during educational/emerging academic activities. Educator showed less persistence with topics and concepts and more or less followed children's leads when it comes to maintaining the discussions.

The relation between educational dialogues and observed process quality

Within this study educational dialogues were identified from videos independently from the process of scoring the videos with CLASS Pre-K instrument. After identifying the episodes of educational dialogues, the CLASS scores for the videos from which the episodes were derived were viewed alongside the results concerning educational dialogues. It is worth mentioning that analysis using the CLASS and qualitative analysis on educational dialogues are operating on different levels: Educational dialogues are concerned on very specific, patterned use of classroom talk, whereas CLASS looks more broadly at the interaction within the classroom and only few of its dimensions capture the dialogue in an adequate specificity. For this reason inspecting the results side by side is merely descriptive in nature.

The following Table 18 indicates how the CLASS scores on dimension and indicator levels changed across the eight episodes of educational dialogue and how they appear when being contrasted with CLASS scores of the randomly selected videos from which the educational dialogues were not identified. Structure of the CLASS instrument and the scores are introduced in more detail at page 91 of this report.

As the Table 18 shows educational dialogues were identified from videos which were scored relatively high with the CLASS Pre-K instrument on the selected dimensions (i.e., Teacher sensitivity; Regard for Student Perspectives; Concept Development; Quality of Feedback; Language Modeling) which is apparent while contrasting these findings to the Figure 2 in Study 1. It is also evident that the CLASS mean scores for videos that included educational dialogues showed generally higher CLASS mean scores on the dimensions of Concept Development, Quality of Feedback and Language Modeling than the videos with no identified dialogical interactions (see Table 18). Also the mean scores on dimensions of Teacher Sensitivity and Regard for Children's Perspectives were higher for

videos with educational dialogues, but the difference was not as profound as for dimensions on the domain of Instructional Support. Thus, the videos were scored rather high on Teacher Sensitivity (mid-high/high range) and Regard for Child Perspectives regardless of identifying educational dialogues or not. This is probably due to the fact that CLASS captures quantitatively a much broader level of interaction compared to detailed qualitative inspection of educational dialogues. Qualitative analysis focused on patterns and forms of classroom talk which represent only a small part of contents of the CLASS instrument. It is furthermore noteworthy that the educational dialogues sometimes represented only a small amount of time (fragment of activity) compared to that used to score the full CLASS procedure.

Table 18 CLASS scores on the videos from which the educational dialogues (ED) were identified

CLASS DIMENSIONS AND INDICATORS	SCORES AND MEANS: VIDEOS WITH IDENTIFIED ED (n = 8; videos a – h)									SCORE MEANS: VIDEOS WITH NO IDENTIFIED ED (n = 20)
	a	b	c	d	e	f	g	h	Mean	Mean
Videos a to h										
Teacher sensitivity	7	7	7	7	7	7	6	6	6.75	5.85
Awareness	5	5	5	5	5	5	5	4	4.88	4
Responsiveness	5	5	5	5	5	5	5	5	5	4.21
Addressing problems	5	5	5	5	5	5	4	5	4.88	4.37
Student comfort	5	5	5	5	5	5	5	5	5	4.58
Regard for Student Perspectives	7	7	5	5	7	7	6	7	6.38	5.75
Flexibility and student focus	5	5	5	5	5	5	5	5	5	4.45
Support for autonomy & leadership	5	5	4	3	5	5	5	4	4.5	4.1
Student expression	5	5	5	5	5	5	5	5	5	4.2
Restriction of movement	5	5	3	4	5	5	4	5	4.5	4.35
Concept Development	4	5	6	5	3	6	5	3	4.63	2.75
Analysis & reasoning	3	5	5	4	3	5	4	3	4	1.9
Creating	3	5	4	2	3	5	5	3	3.75	2.15
Integration	3	3	4	3	2	3	3	3	3	1.8
Connections to the real world	3	3	4	4	2	5	3	2	3.25	2.1
Quality of Feedback	5	6	5	5	5	5	5	3	4.88	2.85
Scaffolding	4	4	3	3	3	4	4	3	3.5	2.4
Feedback loops	3	4	3	3	3	3	3	2	3	1.85
Prompting thought processes	3	4	4	3	2	4	3	1	3	1.45
Providing information	4	4	3	5	4	4	4	3	3.88	2.25
Encouragement & affirmation	4	4	4	4	4	4	3	3	3.8	2.7
Language Modeling	5	5	5	5	5	5	4	3	4.63	2.85
Frequent conversations	4	4	3	3	4	4	3	3	3.5	2.3
Open-ended questions	4	5	3	3	4	5	3	3	3.75	1.85
Repetition and extension	4	4	4	4	3	4	3	3	3.63	2.3
Self- and parallel talk	3	4	4	4	2	4	4	3	3.5	2.5
Advanced language	3	3	5	3	3	3	4	1	3.13	1.85

The CLASS can be seen to reflect similar practices and verbal support with educational dialogues. Firstly, the mean score for the dimension of Concept Development is clearly higher for the videos with identified educational dialogues. Particularly the indicator of ‘analysis and reasoning’ taps the cognitive function of educational dialogues by showing higher mean scores for this indicator for videos with identified educational dialogue. Educators were observed engaging children verbally in problem solving activities that facilitated children to predict or evaluate the ongoing activity. This was many times done via questions that used concrete examples as a starting point ‘If I want to put water in here and I want to fill this bottle with my little cup, is it then done quickly?’ and then by extending the question by asking ‘Why not?’. For 3–6 years old children the concrete hands-on

examples provided particularly good opportunities to take part in educational dialogue and to joint building of thought processes.

Secondly, the scores for Quality of Feedback indicators '*Providing information*', '*Feedback loops*' and '*Prompting thought processes*' tended to be well aligned amongst video recordings where educational dialogues were identified and representing higher scores than for videos without educational dialogues. When scores for these CLASS indicators are ranging from mid-range (3) to high-range (5), educators expand and clarify the topics at hand and recognize children's involvement and provide encouragement. In practice this means that on the videos from which the educational dialogues were identified for instance longer turn-taking loops between educator and children were observed that facilitated use of children's deeper thinking processes and elaborated their ideas. For instance the use of questions such as: 'What did it make you understand about driving without stabilizers?' Or 'What difference there is between a scooter and a bike?—Is that the only difference?' are examples of educators' inquiries that aid the child in deepening his/her thinking by being able to stick to the educational dialogue.

Thirdly, the mean scores for Language Modeling indicators of '*Frequent Conversations*', '*Open-ended Questions*', and '*Repetition and Extension*' were clearly higher for videos with educational dialogues than for videos without educational dialogues. This means that educators were observed somewhat more often in long discussions with children, using questions that required more than one-word responses and elaborating and extending either childrens' answers or initiations on the videos from which educational dialogues were identified. In practice 'why' questions usually evoked more discussion with children and educators' use of follow-up questions (alongside expansions) aided in keeping the educational dialogue ongoing. 'Why' questions, thus, served dual purpose during educational dialogues: on one hand they prompted children to engage and stay along in discussion, but also established a fruitful soil for deeper cognitive reflections more likely to occur (cf. Concept development: '*Analysis and reasoning*').

Concluding remarks

Overall, the findings indicated the importance of educators establishing a sensitive stance toward children's needs and initiations in order to actively support the emerging talk and dialogue in the classroom. Maintaining a collective, reciprocal and purposeful dialogue is a form of classroom interaction whose possibilities educators should become better aware of. It is important for educators to recognize the daily situations which are beneficial for the emergence of educational dialogues. The practical results of this study have particular significance in educators' training and in developing the pedagogical practices in the ECEC. The results may also be useful for professional development purposes by making the classroom talk concrete and visible. Moreover, the results of the relations between educational dialogue in classrooms and CLASS scores somewhat validate the use of the CLASS as our process quality instrument in the CARE study.

STUDY 5 - A cultural analysis of ECEC quality across Countries

Introduction

Positive benefits of ECEC attendance are closely linked to the quality of the provisions (Sylva et al., 2004) and this issue has drawn researchers' and institutions' attention and interest in monitoring the quality of ECEC and in getting to a shared understanding and language on quality (Grammatikopoulos et al., 2015; Ishimine & Tayler, 2014). The international debate on quality raises crucial questions on how far quality can be considered a universal concept and how far it is a 'value- and cultural-based concept' (OECD, 2013, p. 35) and how far its conceptualization may vary across different cultural contexts (Dahlberg, Moss & Pence 2007; Tobin et al., 2009; Vandebroek & Peeters, 2014). As documented in studies related on parental ethno-theories (Harkness & Super, 2004; Super & Harkness 2009) and on ECEC educators' ethno-theories (Tobin et al., 1989, 2009; Tobin, Arzubiaga, & Adair, 2014; Tobin, Mantovani, & Bove, 2010), adults bring-up and educate children in similar and different ways, as they follow diverse ideas about children, their development pace, their learning process, about what make a child prepared to face the world, and as Harkness and Super highlight (2004), there is a lack of studies on the differences among western European countries. The debate on universal vs cultural-related quality/values requires theoretical and empirical efforts to get to a balanced understanding and to develop a cultural-sensitive quality framework of indicators – a main aim of the CARE-project.

Cultural complexity is a cornerstone of this study and a specific methodological approach has been followed to preserve the ecological validity of the results and to enhance the potential wealth of educational-cultural perspectives regarding the concept of *quality* and *good practice* (*good adult-child relationship, good learning modes, etc*). This study briefly illustrates three on going research activities:

- (1) a qualitative and cultural ethnographic research realized within the multiple seven-countries' case-study, involving the educators protagonist of the video-clips as *key-informants* on the *local pedagogical theories-beliefs* that underpin the activities videotaped;
- (2) a critical-cultural discussion of the CLASS tool, applied in our quantitative analysis;
- (3) video-cued focus groups in 5 countries, using videos from the cases studies selected in different country, to elicit beliefs and representations of children's learning and curriculum in ECEC settings (action to be implemented in May-June 2016).

Research questions and aims

The CARE project declares its general purpose, transversal to all WPs, to help define a theoretical frame of reference, criteria and indicators for the quality of ECEC services, to be shared in Europe but also sufficiently flexible and adaptable to different cultural contexts that characterize the composition of the research team (and Europe in general):

- ✓ WP2, p. 8: «*To synthesize the findings into a comprehensive culture-sensitive European curriculum and quality assessment framework to inform practice, educator education and policy*».
- ✓ WP6, p. 31: «*developing a set of European indicators of ECEC quality and child wellbeing (based on results of all WPs). Adapting the indicators to be sensitive to culturally varying values, and providing an overview of assessment instruments that can be used*».

The qualitative cultural study here illustrated is complementary and integrative to the quantitative analysis and it is aimed at reaching a deep culturally sensitive understanding of the quality in ECEC systems. The aims of the three-actions-qualitative-cultural study are:

1. to give greater ecological validity to the cross-national case studies and to the international encoding with the CLASS tool;
2. to enhance the emerging cultural points of view in order to identify important aspects regarding the quality of the selected contexts, that standardized tool the CLASS and the required international encoding could not achieve without the involvement of the perspectives of the “insiders”;
3. to identify similarities and differences in the ways that each country interprets ECEC quality and curriculum, also for a profitable ‘contamination’ of different interpretations of early childhood and education, educational relationship, curriculum, and so on;
4. to introduce qualitative (ethnographic) approaches, tools and processes particularly suited to case studies in cross-cultural context by:
 - involving individuals who are part of the case study centre;
 - introducing a cultural and methodological critical approach to the structured instruments proposed.

Actions in Study 5

The qualitative-cultural study includes three main actions that are being conducted at different level of engagement from partners:

Action 1: Contextualizing the cases studies and giving voice to the protagonists

This first phase of the study is aimed at developing a qualitative knowledge of each selected centre through the voices of the *insiders*. It is aimed at contextualizing the selected case studies and eliciting local pedagogies and concepts of ‘good quality’, providing a short narrative presentation of each centre and involving educators in selecting the video clips (if possible) and in commenting on them (interviews and focus groups). Three countries involved all the national selected ECEC centres; one country involved two of them; two countries one out of the four selected; and one country did not participated in this.

Action 2: A critical-cultural study of the tool CLASS

This second action of the study is aimed at developing a critical – cultural analysis of the CLASS tool, using the instrument as an access to comparison and cross-cultural dialogue by offering a topic-map for debate, observing videos from different countries. This part is being conducted in three countries.

Action 3: Commenting on national and international video-clips

This third action of the study is aimed at exploring more extensively and in-depth the reasons for cultural educational choices, particularly in relation to children’s learning and teaching approach in ECECs, involving educators from several ECEC centres in viewing and commenting video-clips, national and from other countries, eliciting *insiders* and *outsiders* perspectives on the same video-clips from our data (see Study 1). This third action will be conducted in six countries.

The third action's report is not included as it will be carried out in May and July 2016. The first and second actions are still on going: besides a mention to methodology and instruments, just tentative and partial analysis and results are presented.

Action 1 - The multiple case study in seven countries: the view from the insiders

Introduction

In the multiple case-study, countries collected video-data from four '*good practice*' ECEC centres on curriculum implementation, pedagogical approach and global process quality. A case study involves a complex collection of qualitative data (Stake, 1995; Yin, 2002). If the study involves multiple cases, each case is treated individually (ibid) and it involves progressive investigation actions and a definition of the historical, environmental and contextual circumstances (Denzin & Lincoln, 2008). It requires that account is taken of the views of all parties in the 'case', because the ideas of the researchers are only one of many possible points of view. It generally involves the collection of various subjective perceptions of the people involved in the case, the choice of witnesses, the comparison between the different perceptions collected.

The International cross-cultural case-study project encompasses a qualitative-ethnographic research perspective (Tobin et al., 1989, 2009), involving the educator's protagonist of the video-clips and school-directors/coordinators of the selected centres, as *key-informants* on the *local pedagogical theories-beliefs* that underpin the activities videotaped.

Methods and analysis

All the instruments included are aimed at seeking a close/in depth understanding of each case (Yin, 2002), addressing either contextual conditions (*where*, physical and cultural setting), descriptions of activities (*what*) and explanations (*how* and *why*), describing in sufficient detail a sort of portrayal through a multi voice approach, where account is taken of the views of all parties in the 'case' through the collection of various subjective perceptions of the people involved in the case:

- ✓ a narrative presentations of the selected centres
- ✓ a participatory process, involving educators and researchers, of selection of video clips illustrating the high quality of the centre;
- ✓ video-cued one-to-one and focus group interviews;
- ✓ analysis of the collected data;
- ✓ a country report;
- ✓ cross-cultural comparison and report.

A narrative presentations of the selected centres. Each national team has provided a *thick description* (Geertz 1973) of the selected centre/s describing its/their functioning and organization emphasizing its specific characteristic, describing: some information of the local context; criteria of selection and additional local choices; structural characteristics and organizational information;

educational project/program, such as man aims/objects, key elements of the pedagogical approach, specific projects , research and professional development projects and networking, a day in the centre (describing atypical day of the classroom videotaped).

A participatory process, involving educators and researchers, of selection of video clips illustrating the high quality of the centre. Educators, videotaped in the clips, have been involved in selecting the clips (or at least parts of the clips) they would consider representative of the quality of the center, eliciting their point of view on what they consider a *good quality* practice/activity/relationship.

Video-cued one-to-one and focus group interviews. Educators (and school-directors, if any) from the selected centres are considered as *key-informants* on the *local pedagogical theories-beliefs* that underpin the activities videotaped. Qualitative-ethnographic interviews of ECEC educators are aimed to listen and to understand the point of view of the *insiders*-interviewees (educators, coordinators), what they think, their vision on education, on the relationship with a child/children, on the activity in the video clips, their educational beliefs in general.

A set of questions, to be proposed with flexibility, have been provided, aimed at contextualizing the video clips, at making explicit the meanings that *insiders* put into the situation videotaped, in the activity in the video clips; and aimed at addressing general education topics, at understanding the point of view of the *insiders*-interviewees, their vision on education, on the relationship with a child/children, also in connection to key-topic included in the CLASS tool (goals in the child/children-educator relationships, good climate among children; conflicts; misbehaviours; children's learning; adult-child physical contact).

Educators have been involved and interviews have been conducted (based on guidelines in Manual 3) in each country and centre according to local possibilities and availabilities of professionals and this process has been documented as part of the description of case.

Table 19 Interview guidelines: questions

Interview guidelines: questions	
<p>First group of questions strictly related to video-clip/s:</p>	<ul style="list-style-type: none"> • <i>What do you think about this video-clip?</i> • <i>Can you tell me more what you are doing/what is going on?</i> <ul style="list-style-type: none"> • <i>What are your goals?</i> • <i>How did you choose to say.../to do... /to organize things in this way...? (depending on the activity/scene)</i> • <i>In general what aspects/parts do you like most in the video-clip?</i> <ul style="list-style-type: none"> • <i>Can you tell me something more about why you particularly appreciate this thing/part...?</i> • <i>In general what aspects/parts you don't like?</i> <ul style="list-style-type: none"> • <i>Can you tell me something more about why you particularly didn't appreciate ...?</i> • <i>If you could modify something, what would you change...? How?</i> • <i>In particular what do you like most in the way you are in relationship with the child (if in reference to individual time)/ with the children (if in reference to small/large group time)?</i> <ul style="list-style-type: none"> • <i>Can you tell me something more about why you particularly appreciate the relationship with the children/child in this scene/activity?</i> • <i>In particular what you don't like in the way you are in relationship with the child/children...? ...etc.</i>
<p>Second part: general beliefs of the educator/s (some topics picked up from CLASS tools)</p> <p><i>Some of these questions can be addressed in reference to the videoclip</i></p>	<ul style="list-style-type: none"> • <i>What do you think in general of the adult-child relationship /and of the adult-children relationship?</i> • <i>your objectives?</i> • <i>the most important things you care about?</i> • <i>... in promoting a good climate among children? (How do you...?)</i> • <i>... in managing children's conflicts? (How do you...?)</i> • <i>...in dealing with child/children's misbehaviours? (How do you...?)</i> • <i>...promoting children's learning? (How do you..?)</i> <ul style="list-style-type: none"> • <i>What do you think about adult-children physical contact?</i>
<p>Conclusion: questions that can conclude the interview.</p>	<ul style="list-style-type: none"> • <i>What are in synthesis the main points of strength of the relationship quality of this center/you care about?</i> • <i>Do you share this opinion with your colleagues?</i> • <i>Would you show a short video-clip from these to your colleagues? (in case it can open the possibility to make focus group with all the educators) which one?</i>

Analysis of the collected data. A content-ground qualitative analysis of the collected data is being carried out, based on full transcriptions of the interviews and on the videos, anchoring words and clips, in describing emerging meanings and interpretations on values and objectives, educational strategies (providing good climate, managing misbehaviour and conflicts, fostering learnings, ...), communication, emotion, images of the child, of the educator and of the service.

The intermediate level of analysis, before finalizing it, has been organized through a thematic coding process of the transcriptions, sufficiently structured, in order to compare at least part of data, and sufficiently open-flexible, in order to give voice to local/cultural perspectives: wide categories/themes were defined *ex-ante*, while all the codes and sub-codes included in each main category/theme is being developed by each country team *ex-post*.

Box 1 List of main theme/categories

First part: PEDAGOGICAL APPROACH AND RELATIONSHIPS

1. VALUES and AIMS/OBJECTIVES
Values and aims declared/emphasized during the interviews .
2. EDUCATIONAL STRATEGIES
Strategies described by educators as essential components of their pedagogical approach and of their role.
3. COMMUNICATION (among educator and the child/children)
Communication verbal and non –verbal modalities described by educators)
4. EMOTION: Children’s and educator’s emotions described by educators)
5. IMAGES OF CHILD/CHILDREN
Ways to describe children, use of metaphors...)
6. IMAGES OF ECEC CENTER
Ways to describe the centre (its function, characteristics...), metaphors...
7. IMAGES OF EDUCATOR
Ways to describe their role, their competences
8. OTHER...?

Each national team can decide to add MAIN CODES in this part.

Second part: THEMES FROM CLASS TOOL (included in the interview questions)

1. GOOD CLIMATE AMONG CHILDREN
2. MANAGING CHILDREN CONFLICT’S
3. MANAGING CHILDREN’S MISBEHAVIORS
4. PROMOTING CHILDREN’S LEARNING
5. ADULT-CHILD PHYSICAL CONTACT

Each main category/theme has been articulated in trees of subcodes through a bottom up process of interpretation of the emerging themes.

Significant excerpts (*verbatim*) have been selected within the transcriptions, as particularly illuminating and effective, and translated into English, and *language* (words, verbal, *metaphors*) used by our subjects traced, counted, provided in both the original language and English, and defined.

E.g. Scuola cantiere: cantiere in Italian indicates the site where building works are in progress. It is not possible to give a translation into English and the word *cantiere* is used as a metaphor of the school: a school where children collaborate in designing and constructing spaces and corners in their classroom or in common rooms, creating kind of scenarios.

Interviewees have been invited to make comments on clips and the reference to clips is being documented in the analysis as well. For each case study, an activity/routine particularly interesting/original/illustrative of the educative approach has been described in details.

The Italian team is providing supervision of the coding, assuring a coherence implementation of the methodology provided, and a cross-country analysis on data and reports, engaging each national

team in feedbacks and returns of interpretations, highlighting continuities and specificities of each context.

ECEC services and subjects. In the Table 20 the ECEC services and subjects involved in the qualitative part of the study.

Table 20 ECEC services and subjects involved in the qualitative part of the study

Country (A-F)	ECEC centers	Who has been interviewed?	N° of participants Total of 85 participants		N° interviews/focus groups
A	Case 3 - (age 3–4)	Educators (protagonists of the clips and colleagues)	8	Total 11	1 focus group
		Manager of the setting	1		
		Internship students	2		
B	Case 1 - (age 3–5)	Educators (protagonists of the clip)	2	Total 3	1 focus group
		Day care nurse	1		
C	Case 1 - (age 0-3)	Educators (protagonists of the clips and all the colleagues)	12	Total 13	5 individual interviews
		The pedagogical coordinator	1		2 focus groups
	CASE 2 - (age 3-6)	Educators (protagonists of the clips and all the colleagues).	24	Total 25	2 focus groups
		Pedagogical coordinator	1		2 focus group
	CASE 3 (age 0-3)	Educators (protagonists of the clips)	3	Total 4	2 focus groups
		Pedagogical coordinator	1		
	CASE 4 - (age 3-6)	Educators (protagonists of the clips)	3	Total 4	2 focus groups
		Pedagogical coordinator	1		
D	CASE 1 - (age 2-4)	coordinator (trainer and coach) of the preschool	1	Total 6	1 focus group
		Educators (protagonists of the clips and colleagues)	5		
		Coordinator (trainer and coach) of the preschool	1		
	CASE 2 - (age 2-4)	Educator (protagonist of the clips)	1	1 interview	
	CASE 3 - (age 4-6)	Educator (protagonist of the clips)	1	1 interview	
E	CASE 2 (age 0-3)	Educators (protagonists of the clips)	4	Total 5	2 focus groups: -
		Head of the setting	1		2 individual interview
F	CASE 1 (age 0-3)	Educator	1		1 interview
	CASE 2 (age 0-3)	Educator	2		1 interview
	CASE 3 (age 3-6)	Educator	1		1 interview
	CASE 4 (age 4-6)	Educator	1		1 interview

First analysis and tentative results

The analysis of the collected data is providing portraits of local pedagogies and gives insights in developing a reflection on a cross-national cultural-sensitive quality framework of some key-indicators already mentioned in the previous studies. Despite a common framework of aims and values, *process quality* may vary from one context to another in terms of educational strategies,

communication styles, ways to foster children's learning, drawing a kaleidoscope of patterns, interesting to be explored to develop a reflection on a comprehensive cultural sensitive quality and well being framework of indicators and to open the range of interpretations of strategies to reach the same goals. Key indicators will be identified through different local lens such as:

- dyadic, small and large group sensitivity and strategies of educators;
- strategies to stimulates sense of belongingness, independence and social relations;
- strategies to promote learning and balance between holistic and academic approach, hard and soft skills;
- models of integration of targeted and universal-inclusive approaches;
- choices in the offer of materials (toys, structured and unstructured objects...) and spatial arrangements;
- educational perspectives in dealing with daily routines; and
- dealing with emotions (educators' and children's) and communication styles.

Around these key elements of curriculum and pedagogical approach the qualitative analysis highlight educators' reasons behind their choices, challenges and perspectives of enhancement, either as international/common and local ones.

At the end of the study, each context will be described as its own case and a cross-cases comparison will be fully finalized. Some cross-cases comparisons can be already sketched, highlighting some first commonalities and differences.

(a) Common goals. The 14 case studies involved in the qualitative analysis pursue very similar values and goals and share similar labels to define them (see Table 21 goals and values as named by each country team and as emerging from the interviews).

All the educators interviewed have emphasized three main goals, independently of referring to 2 or 4 or 6 years old children: children must first be supported to be **autonomous** and **independent**, in some cases the term autonomy is reported specifically to the cognitive and intellectual dimension, but overwhelmingly the concept of autonomy has been proposed in a broad sense, that encompasses intellectual autonomy, physical and emotional self-regulation as well.

The importance assigned to the pursuit of this goal is supported by the main *images of children* emerged from the interviews, describing the children as individuals with a unique personality, with specific needs with respect to different ages, which develop and explore the world in an active, competent way (they are 'strategic and critic thinkers', 'researchers', 'explorers', 'sponges', 'protagonists of their learning'), having progressively less and less need of the adult proximity.

In connection to this, the predominant way in which educators have described their educational role is consistent with these images: not denying the difference of power and responsibilities between the adult and the child, educators have described often their role as «film directors» (organizers), «scaffolders», «enablers», «sources», «providers of security when is needed, but no more», «specialists in knowing individual children», in differentiating individual personalities, providing adequate inputs and balancing child's initiative and direction, and as «thinking/reflective practitioners».

Table 21 Goals and values as named by each country team (A-F) and as emerging from the interviews

VALUES/ AIMS/ OBJECTIVES	A	D (1)	D (2)	D (3)
	AUTONOMY/INDEPENDENCE (decision making, sense of ownership, strategic thinking to reach own purposes)	AUTONOMY/INDEPENDENCE (self-regulation)	COLLABORATION (Joint club, solidarity)	AUTONOMY
	MAKING REALTIONSIPS (part of the community)	BELONGING	BELONGING TO CONNECT	GROUP INTERACTIONS
	COLLABORATING/WORKING IN A GROUP (talking and waiting turn, listening to others, keeping calm)	ENJOYMENT	CHILDREN LEARNING	LANGUAGE ACQUISITION
				ACTIVE AND RESPONSIBLE LEARNING
	E	C (1)		C (2)
AUTONOMY (self-esteem)	AUTONOMY (respect of rules, safety, freedom, pleasure for doing by themselves)	AUTONOMY (freedom, creativity, responsibility)		
COLLABORATION AND COMMUNICATION (participation/shared activities caregivers and children)	INTERDEPENDENCE (collaboration, pleasure for staying together, belongingness)	INTERDEPENDENCE (collaboration/solidarity, respect)		
BELONGING		PROMOTING LEARNING (knowledge of the world, knowledge of the art, knowledge of themselves)		
	B	F (1)	F (2)	F (3)
AUTONOMY (trust, safety, curiosity)	INTELLECTUAL AUTONOMY (promote child interest/engagement, critical thinking, promote child exploration)	MEMBERSHIP/ COLLECTIVITY OF THE GROUP/BEING TOGETHER	INTELLECTUAL AUTONOMY	
INTERDEPENDENCE (attention focused on child-group relationship, sense of belonging/feeling accepted and welcome)	INTERDEPENDENCY (membership)	LEARNING STIMULATION	IMPORTANCE OF RELATIONSHIP	
ECOLOGICAL SENSITIVITY				

The second objective mentioned in all the case studies is the development of a **sense of belonging, a sense of interdependence**, and the promotion of social relations within the centre, and inclusion in the service of the most significant relationships in the lives of children (the relationship with the parents or guardians in the first place).

Sociality however gets some different nuances: in some contexts it is emphasized as the pleasure of being together, the enjoyment, the care of an atmosphere of conviviality. In other contexts it emerges more as the promotion of the group life, the regulation of behaviour, flexible although it must offer a sufficiently ordered community life.

The third common goal – although not expressly mentioned in all cases – is the **children's learning**, with respect to which is shared a prevailing attention to the 'learning processes' (soft skills), rather than to specific content learning (hard skills), except in some cases where educators have a focused attention to language proficiency, either as universal and targeted goal.

(b) Different educational strategies. The differences among the cases studies emerge in an interesting way in the description of educational strategies, within the common framework of interpretation of the quality of the educational environment for the little ones, which have intriguing variations in relation to the weight assigned to the intentional stimulation of learning, to learning as an individual vs social construction, to the balance between the promotion of autonomy on the one hand and interpersonal relations on the other, to the level of structuring the learning environments of the proposed materials, intertwined variables that define educational patterns and roles of educators also very different.

Table 22 Goals/values and educational strategies in 6 countries

	A	D (1)	D (2)	D (3)
STRATEGIES	<p>CHILD-CENTERDNESS (following child’s interest, recognizing child’s needs, enabling child’s own ideas)</p> <p>BALANCED APPROACH (instruction, support/facilitation, standing right back, letting children express themselves)</p> <p>SELECTING THE ACTIVITIES (open ended ac., real materials, challenging)</p> <p>SUPPORTING ENVIRONMENT (calm and gentle educators and climate, individual attention, acknowledging children’s feelings –facing frustration and challenges, warm, praise, encouragement, never feel they’ve made something wrong- “planted” educators, continuity of the flow of activity, spaces and materials available)</p> <p>LISTENING AND TALKING</p> <p>LEARNING FROM AND WITH PEERS</p> <p>WORKING AS A TEAM</p>	<p>INVOLVING</p> <p>GIVING PERSONAL ATTENTION</p> <p>STIMULATION/INTERACTION</p> <p>PROMOTING CHILD’S INITIATIVE (making a compliment, responding to, naming child’s initiatives)</p> <p>SUPPORTING LEARNING</p>	<p>ADAPTING (differentiating between children’s age, catching the children’s input, balancing inputs, children’s level, children personality, child’s own pace)</p> <p>CHALLENGING (providing and recognizing learning movements)</p> <p>LEADING IN THE RIGHT DIRECTION WITHOUT DOING TOO MUCH</p> <p>RELATING TO CHILDREN’S EXPERIENCE</p>	<p>PROMOTING A SECURE AND GOOD CLIMATE (mixed groups: the eldest take care of the youngest, irony and humor: playing prank, remaining calm)</p> <p>CHILD CENTERD LEARNING (child’s initiative, own choices, taking material by themselves, asking help in problem solving, making the lesson themselves)</p> <p>SUPPORTING LEARNING (involving all the children, adapting to the child’s needs, rewarding, child buddies)</p> <p>TEACHING METHODS MATH (narrative math education, learning different shapes)</p> <p>TEACHING METHOD LANGUAGE (use of academic language, asking to repeat, giving definition of words)</p> <p>BEHAVIOUR MANAGMENT (positive guidance, expression)</p>

	E	C 1	C 2		
STRATEGIES	<p>DIRECTIVE (giving information/knowledge, eliciting information/knowledge, giving demonstration)</p> <p>RECEPTIVE (offering choices, encouraging activity, providing assistance/clarification, suggesting solution, providing feedback)</p> <p>ACCOMPANYING THE CHILD (engagement in neutral behavior, giving reassurance and support)</p>	<p>SETTING ORGANISATION (environment, group size, group composition, materials)</p> <p>CHILD PROTAGONIST (few words, no intervention, following the child's interest, supporting child with micro-gestures, promoting child's participation)</p> <p>RESPECT OF CHILDREN'S BODY (gentle and slow movements, following the child's movement)</p> <p>OBSERVATIVE ATTITUDE (focused attention on group and individual child)</p> <p>GRADUALITY</p>	<p>FOLLOWING THE CHILD LEAD (talking/discussion with children)</p> <p>SETTING/ENVIRONMENT ORGANIZATION (mixed group)</p> <p>STANDING BACK</p> <p>MATERIALS</p> <p>EXPERIENCES OUTSIDE THE ECEC (experience in the garden, guided tours, expert intervention/contributes)</p> <p>GIVING VALUE TO EXPERIENCES</p> <p>LABELLING/GIVING NAME TO THE THINGS</p> <p>PLAYING WITH CHILDREN</p>		
	B	F (1)	F (2)	F (3)	
STRATEGIES	<p>MEETING NEEDS OF CHILD GROUP (individual in the group)</p> <p>CHILD CENTEREDNESS (best interest of the child, hearing and acknowledging the child, taking each child individually into account, observing children to learn from them)</p> <p>PLANNING METHOD (going to child's level, boundaries/rules, small group activities, daily situations)</p>	<p>EDUCATIONAL STRATEGIES (process-based work – following the child lead, differentiating, theme focused, complexifying)</p>	<p>GROUP ACTIVITIES WHILE RESPECTING EACH LEARNING STYLE</p> <p>FEEDBACK ADJUST AND EXPAND</p> <p>SOPHISTICATED MATERIALS (sketches, real life materials, specific materials for specific purposes)</p>	<p>FOLLOWING THE CHILD'S LEAD (differentiation)</p> <p>STORYTELLING</p> <p>SETTING THE TONE</p>	

Some examples can provide first pictures of different educational patterns, comparing here just 2-4 years or 0-3 years centres across countries and focusing on learning.

b1. «Balanced approach», «planted educators» and «cocooned children» (country A – n°1 2/4 day care centre)

In a 2-4 years nursery school located in a small town in a rural area, educators describe what they call «a balanced approach», which is a three level adult's involvement, depending on children's activities and the educators' aims, from instruction, to facilitation and support, to allowing children to get on by themselves without adult involvement. Instruction is mentioned in reference to teaching motor skills and social skills; facilitation and support in reference to the adult judging what a specific child needs in order to succeed with a specific activity and offering enough support for children to be able to get on with their activities, to feel supported and safe: «*They should not offer more than needed, because that would hold back children's development*», so adults need to recognize when they are not needed, when they are not wanted, when they have to give children space to explore and engage independently, staying back (the third level). The *balanced approach* - as described by educators – is aimed at letting children have and develop their own ideas, but being there to support them when needed: materials and objects from the real life are offered and a well organized environment, but still flexible, in order to let the children express themselves («*allowing a little chaos*»), go along with their own interests and ideas, think with their mind, make plans, pursue personal goals and «businesses». This approach doesn't seem specific to certain activities, rather it represents a choice for the whole educational offer in the centre.

Educators from this center emphasize how it is important to follow children's initiatives («*it wasn't what the adults were deciding where it was going, it was like really nurturing those ideas from the child*»), to protect the space and time of child/children's own activity, and to do so, they describe a strategy which is a fourth and overarching one that they want to implement and they reflect on as a team, «*to be planted*»: «*[an adult who is] still and available and not getting up and moving around - we started calling it - we had some training where they started talking about the concept of the planted adult didn't they, the thought that you were very much planted there, which I think maybe enabled those children to stay with you for longer period that might have been the case*». The adult is not leading the activity, is there and still, present, focused, she doesn't want to break the stream of the children's activity and concentration. The «*planted educators*» requires a preparation, as the educator have organized materials and what she'll may need in the area where she stay with the children, and it is a team-work, as it can be a challenge and the other educators have to help in case, providing her the things she needs without jumping up and moving back and forth. The stillness is the adult's protection and respect due to the space and time of a child/children's activity («*to keep the others [children] cocooned in what they were doing*»), and the team-work is the protection that educators offer each other in order to do that («*the better the team works together the more moments like that can happen. And if we recognize for each other there's something going on, don't walk in and interrupt, those moments need to be supported*»).

It is interesting to observe, that educators from this centre emphasize more the individual intellectual activity: while the group of the children is mentioned (a «*calm community*»), the main focus is about providing children a support in developing self-esteem, a *sense of ownership* of what they do and think, and valuing them as *strategic thinkers* with own purposes and eager to pursue them.

b.2. «A joint club», «developmental focused activities», «balancing the input» and «creating learning moments» (country D – n.°2 2-4 Day care centers)

Particularly different look the educational strategies presented in two day-care centers in two different municipalities, where educators have underlined that they try to foster children's learning having a focused attention to each child as an individual personality and at a specific stage of development. In the words of the educators, there is a crucial and marked reference to the development of the child, to her level of cognitive and linguistic development, more rarely to her socio-emotional development. While educators tell about how they work on distinguishing among children «*which are more forward*», which are «*smarter*», and children who are «*back*», who may have a (linguistic) «*delay*» etc., who can be of the same or of different age, key educational strategies of educators are about observing in a focused and grained way how children deal with the activity they propose, selecting structured activity (*a developmental focus activity*) which can be stimulating, engaging, exciting for each specific child. This task becomes a challenge when they lead a group of children, because even though some children have the same age, every child has different level of competences and skills. «*He is really ready for a task/assignment, listening to instruction and then carrying this out* »: so some children are more ready to do structured activities, listening to instructions and carrying out tasks, while other children just want to join the activity but are not *ready* to do the task following the instructions. One of the main challenges of the educators is therefore to understand the right *input* and create a «*learning moment*», asking the right question or giving the right task, trying to understand whether the *child is ready* exactly to that. The word *stimulating* is used frequently and learning is intended primarily as a cognitive and linguistic development.

In this contexts, the social climate intentionally promoted among the children is described more in details than in the previous example and the emotional positive spectrum is wider: emerges the idea of creating a *joint club*, children who feel member of a group of peers having common goals, feeling enthusiasm, excitement, in a joyful climate, also in reference to learning (enjoyment of learning).

b.3 «Balance between the individual and the group», «learning as a group» (country C – n°2 – 0-3 Day care centre)

The educators from two infant-toddler centers in two different towns emphasize the connection between children's autonomy and the life of the peer group. Among the educational strategies, interesting in this context the attention given to the **balance between the individual and the group**. «*Autonomy is not synonymous of independence*» claim the educators. Autonomy, for the interviewed educators, has to do with respect of rules, and with children's ability to be part of the group, to realize their potential while respecting others. Within this framework, *promoting children's socio-emotional development* is a key-factor of educational approach.

As educators say, they primarily direct their attention to guarantee a harmonious atmosphere in the group, to ensure that children appreciate the *pleasure for staying together* even in unstructured situations. In a *pleasant atmosphere*, children can feel safe and at their ease to express themselves. This value is linked in a special way at the *meal time*, viewed as an opportunity for sharing, socializing and having a positive approach to the food, but it is of prime importance in the whole life in the center where children spend a long time.

Feeling part of a group, the pleasure of being together and sharing and communicating ideas and emotions are of prime importance in relation to learning as well, which is conceived mainly as a social collaborative enterprise. Objects and materials provided are not structured, and educators

support children to explore and to *collaborate*, working together, not only to achieve common goals, but listening to each other perspectives, taking them into consideration. Educators intentionally play a role of *mediators* facilitating children to share what they think, to express themselves and to listen to others.

Given this focus on relationship and children social development, as a main point of educational approach, one of the main challenge of the educator is to find the most effective strategies to communicate with children, how to make questions, how to re-launch what children's say and do and how to manage their emotional experience. Educators recognize to have a key role in facilitating children emotional development and often underline *emotions* in their comments.

It is not a case that in all the centers involved in the study peer-tutoring strategies is implemented in order to foster and reinforce children's collaboration and their social community. These three examples from centers of different countries illustrate variations of educational patterns, interesting to be deeper not only highlighting differences and continuities across countries, but enlarging the reflection of educational strategies for professional development.

Action 2 - A critical-cultural approach to the CLASS tool

Introduction

As presented in Studies 1, 2, and 3 CLASS tool is being applied to the video-clips to carry out a quantitative analysis of the encodings. The qualitative and cultural part of the study is aimed at providing an integrative analysis of the CLASS tool, realizing a *multi-voice* discussion on it in some of the countries participating to the multiple case study (Italy⁶, Portugal and the Netherlands), in order to elicit different cultural viewpoints on quality and pedagogy in ECEC settings, and to compare and contrast local theories with the values and the cultural models embedded in the instrument.

The main aim is not criticizing the tool, rather to elicit through the tool and its embedded values and pedagogical models, what are process quality indicators of the cases studies selected in this European study somehow not captured by the tool or differently interpreted.

The CLASS is a standardized observation instrument, based on developmental theory and focused on *process quality*, analysing adult-child interactions and what educators do with the materials they have in US classrooms (La Paro, Pianta & Stuhlman 2004; Pianta, La Paro & Hamre 2008, see Study 1). A rigorous critical reflection on cultural consistency and ecological validity is an essential condition when applying these measures internationally, in ECEC services in cultural contexts that are different

⁶ First results have been presented at the EECERA conference, Barcelona, 2015: Pastori, G., Pagani V., Mantovani S., *Is validation always valid? Cross cultural complexities of standard-based instruments migrating out of their context. A Study on CLASS Pre-K in Italy (3-6 ECEC services)*; Pagani V., Pastori G., Mantovani S. *A new perspective on quality evaluation: fostering teachers' reflectivity using standard-based assessment tools within a participatory framework.*

A paper on first results of the study conducted in Italy has been presented to the European Early Childhood Education Research Journal: *Is validation always valid? Cross cultural complexities of standard-based instruments migrating out of their context*, Giulia Pastori and Valentina Pagani (Department of Human Sciences, University of Milano-Bicocca, Milan, Italy).

An extension of the study is at the moment involving 41 preschool teachers and 21 classrooms (150 video clips), 21 infant-toddler center teachers and 10 classrooms (30 video clips), 5 pedagogical service coordinators by Valentina Pagani doctoral thesis (in progress).

from the original ones. While it is appropriate – on a scientific and *political* level – to recognize the continuity and size of agreements between different countries and cultures regarding quality in ECEC, it is just as important to emphasize the variety of local children’s education cultures and to question a rigid universal idea of *educational standards of quality*. Uncritical use of assessment tools across cultures might lead to negative repercussions, both theoretically and practically: for example, not taking into account and not enhancing local features regarding the concept of quality; applying instruments perceived as distant and unshared by local professionals; promoting a homogenizing concept of ECEC quality in the long term, which is blind to the idea that «the diversity of cultural ways within a nation and around the world is a resource for creativity and the future of humanity» (Rogoff 2003, p. 18).

Method

National experts in ECEC and the educators from the selected four ECEC centres are involved in discussing the CLASS tool. The CLASS dimensions, indicators and behavioural markers are used as a topic-map for extensive and in-depth exploration of the pedagogical approaches and choices in interacting with children, highlighting the local-cultural pedagogical traits and, concurrently, the cultural values embedded in the tool itself. The CLASS tool is assumed to be a powerful highlighter of different cultural perspectives and a stimulus to activate “intercultural dialogue” *supported by and with* the instrument itself.

In order to discuss the CLASS tool, research participants are involved in focus groups and reflective seminars organized according to the following steps:

1. introduction to the CLASS tool (Toddler or Pre-K version): presentation of the theoretical framework, detailed description of the dimensions, viewing of sample video-clips;
2. observation of a video-clip from a national center and encoding using the CLASS: the educators, divided in groups, focus on 3-4 dimensions to encode, with one dimension common across the groups;
3. comparison between the codes assigned by certified observer (CLASS perspective) and by educators (pedagogical-cultural perspective);
4. observation of video-clips from the center they are employed in, sharing the feedback provided by CLASS.

A set of questions guides the discussion (see Box 2).

BOX 2. A cultural analysis of the CLASS tool: Guiding questions

Continuities	<i>Do any dimensions and indicators in the instrument seem familiar? Which ones?</i>
Disagreements	<i>What dimensions/indicators you would eliminate and why?</i>
Missings	<i>What dimension/indicator would you add (i.e. what dimensions/indicators are missing regarding the adult-child relationship that you consider key)?</i>
Differences	<i>What dimensions/indicators do you perceive as more exposed to a different cultural interpretation, if any?</i>

Participants

This part of the study at the moment has been carried out only in Italy⁷ (see Table 23 participants).

⁷ For the University of Milan-Bicocca, the Class discussion involved as reserachers: Susanna Mantovani, Giulia Pastori, Piera Braga, Silvia Cescato, Valentina Pagani, Gaia Banzi; for Reggio Childen, the research team involved: Claudia Giudici, Carla Rinaldi, Paola Cagliari, Marina Castagnetti, Lucia Colla, Mirella Ruozi.

Table 23 Meetings and participants involved

Cases	Meetings	Participants
CASE 1	2 Seminar - 6 h Presentation and discussion of <i>CLASS Toddler</i>	12 Infant-Toddler Educators 1 Pedagogical Coordinator
CASE 2	1 focus group - 2 h Presentation and brief discussion of <i>CLASS Pre-K</i>	24 Preschool Educators 1 Pedagogical Coordinators
CASE 3	2 Seminars	3 Infant-Toddler Educators
CASE 4	6 h Presentation and discussion of <i>CLASS Toddler & Pre-K</i>	3 Preschool Educators 8 Pedagogical coordinators 1 President of the Reggio Children Institution. 1 Coordinator of the ECEC services of the municipality of Reggio Emilia.
		Total 54

First analysis and tentative results

The CLASS, in the focus group discussion with the educators of the selected cases studies in Italy, provided the research participants with a common lens and framework for observation and comparison, recognizing *continuities* between their local-cultural perspective and the one offered by the tool. Key features in adult-child relationships were not captured by the CLASS (*missing*) or they were interpreted differently from the local cultural, scientific, pedagogical background (*differences*). Some *disagreements* were expressed as well.

At these four levels, some main recurring themes have been highlighted by the Italian participants and some examples are pointed out in the Table 24, although the analysis is still on going. As the Italian educators have pointed out, the CLASS is an interesting and insightful instrument, but there are also many dissonant elements of prime importance that do not seem to fully mirror the meanings assigned to *effective adult-children relationships* in the Italian context.

The centrality of *the adult-child relationship* has been strongly appreciated as interpersonal relationships are considered to be a fundamental means for supporting children's socio-emotional and cognitive development, and some dimensions from CLASS framework have collected a favourable overall feedback: the importance given to some emotional aspects (warmth, enjoyment, respect...) in the Positive Climate dimension; the acknowledgment of the valuable contribution of children's interests and ideas to the classroom activities, in Regard for Student (Child) Perspective; or the focus on the process of learning and on stimulating children's reasoning and thinking within the dimensions of Concept development (Facilitation of learning) and Quality of feedback.

Table 22 Main points highlighted by Italian educators and early childhood experts

	Continuities	Missings	Differences	Disagreements
Main points highlighted by Italian educators and early childhood experts	Centrality of the adult-child relationship	Lack of attention paid to physical classroom environment (use of spaces and materials), plays a key role in <i>scaffolding</i> children's learning, self-confidence, independence and socialization, creating the condition to construct significant, supportive relationships.	Methodological observational procedure (no reflexivity of the educators)	Dimension <i>Productivity</i> , a feature in the CLASS Pre-K, that encompasses how efficiently educators deal with disruptions and managerial tasks and keep children <i>busy</i> , raised reflections on the value on giving the children a relaxed time , a time to observe, to think, to imagine and not doing something.
	Positive Climate, the importance given to some emotional aspects (warmth, enjoyment, respect...)	The marginal role assigned to peer relationships* , as a key-factor in promoting children's learning and socio-cognitive development	The concept of children's learning* , as too much focused on cognitive and linguistic development, while crucial are learning to cooperate, to be part of a group or a community, to be responsible for others, to regulate their emotions and to understand and recognize those of others, to acquire basic life skills	Effectiveness : to be aware of children's needs, concerns, conflicts and unacceptable behaviors, not necessarily result in timely intervention by the adult. An effective strategy can be also non-intervention .
	Regard for children's Perspective	A not active enough role assigned to children as resource* .		
	Concept development and Quality of feedback	The absence of intercultural and inclusive education		

Among others, four main differences can be here highlighted from the table:

- *the key role of peer interactions*: in the opinion of the Italian educators, the CLASS tool assigns a marginal role to peer relationships, focusing mainly on one-to-one interactions between the educator and the child, considers peer relationships nearly exclusively from a socio-emotional point of view and not as a key-factor in promoting children's learning and socio-cognitive development. Therefore, it does not give due emphasis to the crucial role played by educators in fostering peer interactions, socialization, reciprocal support and learning as a quality indicator of adult-child/children interactions. Conversely, peer relationships are a central aspect in the Italian pedagogy (Malaguzzi 1993; Musatti 2007), Italy has developed significant reflections on sociability among peers, learning through peer interaction and on the educators' double focus on both the individual and the group, thanks also to a high adult-children ratio. This crucial point is emerging as a shared concept across

the cases studies involved in the qualitative interviews and it may represent a key process quality indicator not only for the Italian context not covered by the tool. (see videolibrary)

- *The concept of children's learning*: the CLASS tool focuses solely on the cognitive and linguistic learning, while the research participants share a broader vision of what learning is, embracing children's socio-emotional development and the role of educators in fostering it providing children with opportunities to learn to cooperate, to be part of a group or a community, to be responsible for others, to regulate their emotions and to understand and recognize those of others, to acquire basic life skills. None of these aspects are included in the CLASS definition of learning. (see videolibrary)
- *Children as resource*: strictly connected to the valued assigned to peer-interactions and to a wide concept of learning, according to Italian practitioners the CLASS places an excessive emphasis on the adult's role and underestimates the children as resources and as active and competent enough to share and co-construct knowledge, or to discuss social rules, and often seem passive receivers of the educator's interventions. This perspective leads to a reductive concept of learning as still a too top-down process from educators to children, or to an idea of behavior management conceived of as only the educator's responsibility. (see videolibrary)
- *Inclusiveness*: The CLASS measure does not specifically assess inclusive competence and cultural sensitivity, however, according to Italian educators, fostering intercultural and inclusive competencies should be considered an essential aspect of classroom quality, a perspective rooted in the long-standing Italian tradition of inclusiveness (especially in relation to disability). A high quality adult-child relationship has to encourage children to be aware of and respect all forms of diversity and differences between individuals and groups. (see videolibrary)

The qualitative-cultural analysis of the instrument involving groups of educators in Portugal and in the Netherlands will provide new perspectives and the analysis across the three countries' data will enrich a reflection on the continuities shared across the countries and with the perspective embedded in the tool, points of strengths, as well as limits, differences and missings of the tool, which represent key indicators of process quality of the adult-child/children relationship, relevant from a European ECECs perspective.

Promoting a critical cultural approach to evaluation tools means also ceasing to consider the relationship between the tools and the services they evaluate only in a top-down, unidirectional way. Assessment and validation-adaptation processes can benefit from a reversed perspective that involves professionals in a reflective experience and an intercultural dialogue supported by and with the instruments (Pagani, Pastori, & Mantovani, 2015). It offers educators an enriching opportunity to express the definitions of quality underlying their practices; to acquire a deeper awareness of them; to compare and even intentionally contaminate their local theories with values embedded in the instrument. It can therefore foster professional development and reflection and, consequently, improve quality.

Discussion of the Report

The multiple case study involved new data collection in seven European countries and aimed to investigate process quality, implemented curricula, pedagogical practices and educational dialogues in European ECEC centers identified as 'good practices'. A multi-method approach was used to obtain a comprehensive overview of different aspects of quality in classrooms for 0-3 years olds and 3-6 years olds. Videos were made of four common situations in ECEC centers, i.e. play, mealtime, creative and educational/emergent academic activities, allowing for an evaluation of the process quality with a standard observational tool, for which the CLASS Toddler and CLASS Pre-K were chosen, and an in-depth analysis of educational dialogues as a specific form of talk and interaction in the classroom. The CLASS was chosen as an example of a well-developed, theory-based standard observation instrument that is currently widely used in many countries worldwide, including several European countries. Educator reports were used to collect information on structural quality, educator, classroom and center characteristics as well as information on the 'implemented' curriculum of provided activities focusing on (pretend) play, self-regulation and different types of pre-academic activities, including language, literacy, math, and science activities. In addition, information on educators' beliefs and perspectives on classroom quality was collected through interviews and focus group discussions.

Process quality in ECEC centers

Classroom process quality in terms of adult-child interactions has been shown to contribute to children's learning and development (Pianta et al., 2008). Process quality refers to characteristics of adult-child interactions and covers both social-emotional aspects of these interactions, such as the classroom climate and educators' sensitivity towards children's needs and the extent of child-centeredness, as well as the educational aspects of these interactions that support children's development and learning, such as the quality of feedback provided to children and the extent of language use and language modelling in the classroom.

First, the present study showed that emotional support in 0-3 and 3-6 years old classrooms was on a high level and, on average, higher than previous studies conducted in part of the currently participating countries have reported, such as Finland (Pakarinen et al., 2010), Germany (von Suchodoletz et al., 2014), the Netherlands (Slot et al., 2015) and Portugal (Cadima et al., 2016a, 2016b). Second, the level of classroom organization was also higher in the current sample of 3-6 years old classrooms compared to results from Finland (Pakarinen et al., 2010), Germany (von Suchodoletz et al., 2014), and Portugal (Cadima et al., 2016a, 2016b). Finally, the instructional support was on average at the same level as in previous Finnish study (Pakarinen et al., 2010) but higher than in other European studies (Cadima et al., 2016a, 2016b; von Suchodoletz et al., 2014; Slot et al., 2015). The overall pattern of the findings for process quality showed that emotional quality and classroom organization were in the higher range, whereas support for learning was in the mid-range, which is a typical pattern found in most countries in Europe and the United States as well. However, the process quality observed in the current sample was on average higher, thus reflecting that we indeed succeeded in identifying classrooms with good practices across Europe, which enabled us to enrich our understanding of how good process quality looks like in different countries and how this is related to structural characteristics of centers.

Despite the (on average) high quality, there was some variation as well. Variation in process quality appeared to be related to both the type of activity and the learning format (small vs. large group). In 0-3 classrooms play and educational/emerging academic activities provided the best opportunities for children to be engaged in higher quality interactions, both with regard to emotional support and support for learning and development from educators. In 3-6 classrooms educational/emerging academic activities also showed the highest quality in both domains, but play situations now showed somewhat lower quality in instructional aspects. One important explanation is that in 0-3 classrooms play was more often actively guided and facilitated by educators, whereas in 3-6 classrooms educators tended to take a monitoring role or not to be present at all in play situations. Note that this could be part of their pedagogy and reflect an intentional choice of educators. Moreover, there was also variation within the studied educational/emerging academic activities in the 3-6 classrooms. Instructional support was rated higher during science activities. It appeared that science activities mostly concerned hands-on activities which, on average, were provided in smaller groups compared for example to language and literacy activities that were more often provided in the whole group and included activities such as circle time talk, shared reading and singing songs.

Furthermore, the variation in process quality between different types of activities revealed a tension between showing child-centeredness, that is, providing children with choices and following their lead during activities, which was highest during play, on the one hand, and expanding children's cognitive and language development through often teacher-directed instruction, on the other hand, which was highest during educational/emerging academic activities and creative activities, and also at meal time in 3-6 years old classrooms. It appeared that educators' regard for children's perspectives was highest during free play as children could choose what to play with and determine the direction of their play with relatively little emphasis on learning and development, whereas learning opportunities in the classroom were highest during educational/emerging academic activities, with more variation in, and an overall lower average level of, child-centredness during these activities. Some educational/emerging academic activities, such as language and literacy activities, were stronger educator-directed, whereas other types of activities, such as science activities, appeared to be more child-centred. Science activities, often taking the form of discovery play, in particular, seemed to be good opportunities to support children's cognitive and language development, which was evident in higher scores on the CLASS dimensions targeting these developmental domains. It is important to note that the quality of Language Modeling was relatively high during mealtime in 3-6-years-old classrooms, suggesting that during meals, there were several opportunities for talk among children and educators. However, this was not evident in 0-3-years-old classrooms where the lowest scores for Regard for Child Perspectives and Engaged Support for Learning dimensions were observed during meals, possibly reflecting distinct views on routines, and the extent to which routines are considered important learning moments for young children.

This relates to a second finding concerning the group arrangement during the provided activities. Process quality was higher during small group activities compared to whole group activities, which was particularly evident for the dimensions regard for children's perspectives, quality of feedback and language modelling. Within educational/emerging academic activities it appeared that particularly science activities were conducted in, on average, smaller groups (which pertained to 6 of the 14 activities), whereas language, literacy and math activities were conducted in comparatively larger groups, although there was still considerable variation between centers. Hence, in view of actively involving children in activities and maximizing their learning opportunities might require us

to rethink the common pedagogy of providing educational/emerging academic activities, specifically literacy and language activities, in large group settings.

Curriculum activities in European ECEC centers

Educators reported on the curriculum activities and children's behavior that are seen as important for children's development, in particular pretend play and self-regulation, and different types of pre-academic activities, including language literacy, math, and science activities. There appeared to be different patterns for 0-3 and 3-6 classrooms, with an emphasis on the provision of self-regulation and pre-academic activities for older children. However, there appeared to be differences between countries as well, likely reflecting variation in pedagogical traditions. On average, there seemed to be a stronger focus on language and math activities than on literacy and science activities, in both 0-3 and 3-6 classrooms. When distinguishing between different types of curricula it appeared that a *balanced curriculum* with roughly equal emphasis on play, self-regulation and pre-academic activities was related to the highest observed process quality. A predominant orientation on play in 3-6 years old classrooms, at the expense of other types of activities, appeared to be related to lower instructional support for children's learning although emotional support and classroom organization were on a high level also in these classrooms. This points to the importance of having a curriculum with a good balance between different types of activities to support children's holistic development.

Structural quality and relations with process quality and curriculum

The structural characteristics of the centers differed between countries, but also showed variation within countries and between age groups. A common pattern in 0-3 classrooms with a smaller group size, but with an unfavourable children-to-staff ratio, was that educators reported a stronger emphasis on self-regulation compared to classrooms with less favourable conditions, which illustrates that different combinations of structural quality in terms of group size and children-to-staff ratio together with children's age range are related to different provisions of activities in the classroom. A common pattern in 3-6 classrooms with a larger group size and a less favourable children-to-staff ratio, was that educators tended to have higher educational qualifications that could partly compensate for the unfavourable structural conditions, at least in the current sample of selected good practice centers.

Opportunities for further in-service training were, on average, more common for 3-6 educators than for educators in 0-3 classrooms. Moreover, it appeared that educators with higher pre-service qualifications attended additional in-service training more often than educators with the lowest qualifications in the current selective sample.

Relations between structural characteristics and process quality revealed that different combinations of characteristics were associated with similar levels of process quality. Moreover, what is often regarded as the most favourable combination of structural conditions - a small group size and a small, favourable children-to-staff ratio - was not related always to the highest process quality in this selective sample of good practices. An explanation based on our field notes may be the way in which educators organize activities in their classroom. Educators working in classrooms with a comparatively large group size were found to organize small group activities during the day, which in turn was related to higher process quality. Within a large group with several educators, educators can divide roles and work with small groups of children within the large group, allowing for more

variation in pedagogical learning formats and in age, ability and interest grouping.

A similar pattern emerged when looking at the provided curriculum. Different combinations of group size and children-to-staff ratio were related to the provision of play, self-regulation and pre-academic activities. In 0-3 classrooms with the most favourable conditions (small group size, low children-to-staff ratio), educators tended to place more emphasis on play, at the expense of self-regulation and pre-academic activities, while play was emphasised in 3-6 classrooms with a large group size and high, unfavourable children-to-staff ratio.

Other structural quality aspects included opportunities for additional in-service training, professional development activities provided at the center and the overall organizational climate in the center, which were all found to be important for process quality and curriculum emphasis. Additional in-service training in combination with longer work experience was related to higher process quality and to a balanced implemented curriculum of pretend play, self-regulation and pre-academic activities in 0-3 classrooms, which in turn was related to the highest process quality scores as obtained with the CLASS. Also opportunities for continuous professional development in the center, including team meetings to discuss the developmental and educational goals of working with children, coaching, and using collegial observation and feedback to improve practice, was related to higher observed process quality and a stronger emphasis on the provision of self-regulation and academic activities compared to other centers. These results were strongest when educators also evaluated the overall organizational climate of their center higher in terms of collegiality, supportive supervision, joint decision-making and clearly defined goals based on a shared mission and orientation. The findings are in line with the findings of the CARE secondary data analyses conducted on five large data sets regarding the relations between structural quality and process quality, showing that particular constellations of structural quality characteristics (and interaction effects) rather than single characteristics predict process quality (Slot et al., 2015).

Educational dialogues and process quality

Educational dialogues are considered a specific form of collective, reciprocal, and purposeful interactions in which there are extended verbal exchanges between the educator and children involving questioning, listening to each other and sharing of different ideas and points of view aimed at challenging children's thinking with the goal of constructing a joint understanding (Alexander, 2006, 2008). Engaging children in educational dialogues increases their participation in play or activities and makes it more meaningful in terms of learning opportunities.

The aim of identifying educational dialogues was to make the role of language more visible in ECEC classroom interactions and to provide concrete examples of situations where educators are shown to engage children in reciprocal sharing of ideas and where educators are supporting discussion by actively providing feedback and by encouraging children's to participate and talk. Focusing on 3-6 classrooms only, two contrasting types of situations in 3-6 classrooms were used to identify possible educational dialogues, namely play and educational/emerging academic activities, which resulted in a total of 8 educational dialogues out of 28 situations.

Educational dialogues occurred more frequently during educational/emerging academic activities (in 5 out of 8 situations) and were mostly initiated by educators, whereas the educational dialogues that emerged in free play situations were more often initiated by children. Educational dialogues

occurred both in small and large group situations. Regardless of the group size, not all children participated equally in these discussions. However, in smaller groups proportionally more children participated in the dialogues than in larger group situations. On average, two to six children showed active participation in educational dialogues, which might be related to both child characteristics (i.e., their developmental stage or language skills) and educators' choices (i.e., the tendency to focus on children who are more visible and show more active involvement). In the episodes with educational dialogues the educators' role varied from a more leading role to that of a facilitator. Children's participation was most likely to occur when the topic of the discussion was familiar and related to children's daily and personal experiences or knowledge, and when the educator used hands-on materials or concrete examples.

Hannula (2012) has pointed out that children need more than just language skills to be able to join educational dialogues. She states that three elements need to be present for educational dialogues to emerge, namely (1) support for the dialogue, (2) affordances for the dialogue, and (3) time and space for the dialogue. Within this study, high support for the dialogue was dependent on the way the educator organized the talking. Firstly, educators' support for turn taking via validating children's answers and initiations seemed to be essential for the educational dialogues to evolve. For instance, educators responded contingently to children's initiations and often extended or elaborated these initiations further. Secondly, educators used summaries in nearly every educational dialogue, meaning that after the exchange and sharing of ideas via several turns, the educator integrated the topics and wrapped up the discussion. Sometimes making a summary also included making a generalization at the same time. Muhonen et al. (2016) have also stressed the importance of educators' argumentative comments for educational dialogues, but within this study, such comments were not identified. Moreover, affordances for the dialogue were a central part of the educational dialogues identified within this study. Children's initiations often included the reporting or sharing of their own experiences. This illustrates the significance of concrete examples from children's daily experiences and using hands-on activities to support educational dialogues. Common to all identified educational dialogues was that in each of the episodes an unhurried atmosphere was established where educators were taking time to listen to children and giving them time to elaborate upon these emerging ideas. This suggests the necessity of scheduling sufficient time and space for educational dialogues.

Educational dialogues were identified in classrooms that were also rated higher on the observed process quality as assessed with the CLASS Pre-K which validate the use of the CLASS as an appropriate instrument that is sensitive to the occurrence of educational dialogues. Particularly, the dimensions Concept development, Quality of feedback and Language modelling were rated higher for video recorded situations in which educational dialogues were identified compared to situations in the videos without educational dialogues, showing large differences. In the situations in which educational dialogues were identified, the educators showed higher frequencies of back-and-forth exchanges focused at a deeper learning and enhancing children's analysis and reasoning skills, and more extensive use of open-ended questioning and follow-up questions to facilitate extended dialogues with children. Extended dialogues require the educators to be sensitive to children's needs and initiations and to adopt a child-centred approach in conversations with children, and to facilitate the sharing of ideas and thoughts in a freely manner. Although these process quality dimensions (i.e. Teacher sensitivity and Regard for student perspectives) were rated in the high range, they were rated only moderately higher than in classrooms without educational dialogues. This suggests that

creating an emotionally supportive environment for children to freely express their ideas is a necessary, but not sufficient condition for eliciting in-depth conversations that promote children's understanding and learning. However, we need to keep in mind that our sample in this multiple case study was highly selective based on expert opinions about practices in centers in each participating country.

Interestingly, upon further differentiating between educational activities, it appeared that educational dialogues were identified mostly during science and math activities and less often during language and literacy activities. Language and literacy activities in the current sample of 'good practice' centers tended to be more educator-directed, with less elaboration on children's ideas and thoughts. It seems that certain types of activities, involving problem solving, reasoning and analysis, elicited more and deeper discussion of the topics at hand.

A cultural analysis of quality in ECEC

Classroom quality is not an unproblematic construct. The debate continues on what can be considered good quality, to what extent quality can be defined as a universal concept or whether it is an essentially value- and culture-based concept (Dahlberg, Moss, & Pence, 2007; Tobin et al., 2009; Vandenberg & Peeters, 2014).

In the present study professionals, 84 educators and other stakeholders (e.g. pedagogical coordinators), of at least one centre per country participated in either focus group discussions or one-to-one personal interviews to learn about their values and beliefs regarding classroom quality and to discuss their reflections on their own practices. There appeared to be a great deal of consensus about what professionals consider as the core goals of ECEC. Three main goals mentioned by professionals were (1) support for children's autonomy, (2) creating a sense of belonging, and (3) fostering children's learning. The concept of autonomy was referred to in a broad sense and included aspects such as cognitive and intellectual autonomy, physical autonomy and emotional self-regulation. This concept emerged in the interviews and focus group discussions when the professionals described images of children that referred to children as having unique personalities with specific needs, who develop and actively explore the world with a decreasing need of adults to be in their proximity. The educators defined their role as a supporting one, scaffolding when needed and seeking balance between their input and children's input and initiatives, while differentiating between children in accordance with individual needs, personalities and developmental levels.

Creating a sense of belonging among children was mentioned as the second main goal of ECEC, which was expressed in different ways. Some educators emphasized aspects of belonging to a group, feeling accepted in a community and being able to regulate behaviour accordingly, while others mentioned aspects of joint pleasure and enjoyment. Finally, children's learning was mentioned, although not always very explicitly, with a strong focus on aspects of learning processes concerning procedural 'soft skills' rather than on the precise knowledge content of these learning processes or on pre-academic 'hard skills'. Relatedly, the educators expressed which kind of educational strategies they used in their pedagogy, which revealed some differences between educators from different countries, specifically for the practices concerning younger children, regarding three aspects. First, educators reported to constantly seek a balance between being child-centered and following children's lead, on the one hand, and providing more intentional stimulation of children's development and learning, on the other hand. Second, in the same vein, they reported to seek a

balance between the promotion of individual autonomy, on the one hand, and fostering interpersonal relations, on the other hand. The third strategy referred to the use materials and ways to structure the learning environment for children.

In another part of the study, based on Italian professionals' reflections, some important themes concerning quality and the use of the CLASS tool to assess quality emerged. In this part of the study Italian educators critically reflected on the CLASS (CLASS Toddler and Pre-K), an observational tool developed in the United States, to see whether the content of the tool reflected their view of quality. The CLASS was chosen as an example of a well-developed, theory-based standard observation instrument that is currently widely used in many countries all over the world, especially in participating countries in CARE-project. The CLASS is a tool to evaluate different aspects of adult-child interactions and how educators use materials in play and activities, thus capturing the classroom processes. There appeared to be consensus concerning key elements of the CLASS that were also reflected in the educators' views on the goals of ECEC and the educational strategies they use in the classroom, as discussed above. This concerned mainly the strong emphasis on social-emotional aspects of the classroom environment, such as an overall positive climate in the classroom with warm and nurturing adult-child relationships and a general child-centred approach in interacting with children. Also the support for children's learning that educators subscribed to seems well reflected in the CLASS.

However, in another focus group discussion with Italian educators a number of issues emerged that seems currently not sufficiently covered by the CLASS (and related instruments). For instance, the role of peer interactions in children's learning and development and, relatedly, the role of the educator in supporting these peer interactions in the classroom are currently underemphasized in the CLASS, according to Italian educators. In their opinion, the emphasis on children's learning as operationalized in the CLASS is too narrowly focused on children's cognitive and language development, while missing opportunities for supporting children's social emotional development by learning them to cooperate, to be part of a group and to understand and regulate emotions vis-à-vis the group. As a matter of fact, this theme was put forth by educators from all seven countries in the aforementioned interviews and focus group discussions and the theme is in agreement with the findings from the CARE Stakeholders survey in which both educators and parents emphasized soft skills as important developmental and educational goals of ECEC (Broekhuizen et al., 2015).

Another aspect mentioned by the Italian educators was the idea that children are active and competent individuals, who in part can shape their own learning process and should be given the shared responsibility to do so. In their opinion, the CLASS seems to be putting too much emphasis on the educator's role in children's development, learning, and behaviour, and hence does not fully acknowledge children's own role and responsibility. Finally, the Italian educators expressed that inclusiveness is an essential aspect of process quality for them, which is rooted in a longstanding Italian tradition of making children aware and encourage them to show respect for all forms of diversity and differences between people and groups. This inclusiveness perspective is lacking in the CLASS, which makes it more difficult to apply the instrument in inclusive settings.

Implications and future research

The data collected in the multiple case study provide a rich and comprehensive overview of curriculum, pedagogy and quality in the selected ECEC centers from seven European countries. The

data also illustrate several emerging issues relating to the key question ‘what can be considered high quality and good pedagogical practices from a European perspective’ and also point to new directions for improving quality and pedagogical practices in ECEC.

Overall, there seems to be a high level of agreement among researchers and practitioners on what constitutes high quality, which is apparent from the discussions with professionals and evident in the observational tool to evaluate process quality (i.e. the CLASS). There is general consensus about the importance of a positive and pleasurable classroom climate with highly sensitive educators who engage in positive interactions with children while adopting a child centred approach. Also fostering and supporting children’s broad development is shared as an important aspect of process quality among professionals and, in general, considered to be sufficiently represented in the CLASS. However, it also seems that the CLASS does not necessarily capture all relevant aspects of process quality. This concerned specifically the lack of attention to group processes and teachers’ strategies to foster collaboration, inclusiveness and a sense of belongingness among children, and also the lack of emphasis on what children themselves bring to classroom interactions and how they themselves can show cooperation and responsibility, for example in free play situations.

Centre-based ECEC provides a unique social setting in which children have ample opportunities for interacting and playing with peers in a formative period of their lives while being part of a group, promoting the development of a broad array of social-emotional competences, such as regulating emotions and behaviour in order to develop socially acceptable classroom behaviour. Children learn to share toys and materials, to coordinate and jointly plan play with peers and to resolve conflicts with peers. However, many observation instruments like the CLASS are rooted in attachment theory (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969) and focus mainly on social-emotional and instructional aspects of dyadic adult-child interactions (Hamre & Pianta, 2007), which does not necessarily capture enough the group-based nature of center-based ECEC (Ahnert, Pinquart, & Lamb, 2006; Burchinal, 2010; Rosenthal, 2003; van Schaik, Leseman & Huijbregts, 2014). In fact, sensitivity towards the group, rather than sensitivity towards individual child, has been found a stronger predictor of children’s positive attachment to educator (Ahnert et al., 2006). Moreover, group sensitivity and supporting group processes of young children, such as peer awareness, interaction and collaboration with peers, for instance in play situations, have been shown to be related to higher cognitive engagement in collaborative play and work activities (van Schaik et al., 2014). As the issue of being part of a group was mentioned by several educators from all participating countries, at least to some extent, this may point to cultural values that reflect a mix of individualistic and collectivistic-relatedness beliefs that are more prominent among stakeholders in European countries than, for instance, in the United States, which is more individualistic cultural context (Rosenthal, 2003). Moreover, besides a general reference to culture-based values, this might point to a prominent European concept of ECEC as providing ‘places of life’ that support children’s broad development, including social development, and to a related European concept of learning inspired by theoretical models (relational approaches, constructivist theories, socio-cultural theories, social learning theory, or situational approach) rooted in the European ECEC tradition as highlighted in the CARE Curriculum study (WP2 D2.1; Sylva et al., 2015).

Another issue emerging from the case study concerns the on-going debate on what constitutes a good curriculum for young children, balancing play and self-regulation with pre-academic curriculum activities aimed to support children’s holistic development. The CARE Curriculum study (Sylva et al.,

2015) already revealed that there is a shared understanding regarding the importance of a balanced curriculum in ECEC, although countries differ in the emphasis placed on particular developmental domains. The findings from the current multiple case study corroborate the results from the curriculum study. It also illustrates the importance of self-regulation and pre-academic activities for higher process quality in 3-6 years olds classrooms as measured with the CLASS. Furthermore, there are indications that too strong a focus on merely children's free play might be at the expense of providing children with other learning opportunities. Note, however, that in the current case studies several good examples of play situations were found in which educators expanded children's learning and development, while maintaining child-centredness or educational dialogue. Whenever educators were able to use children's interests and initiatives as starting points and used scaffolding to expand children's play, and asked open-ended questions to encourage children's thinking skills or helped them resolve a problem that had arisen during play, this was reflected in higher scores in the CLASS instructional support domain too. Moreover, there were also examples of educational dialogues in play situations suggesting that a more profound and deep discussion to enhance children's learning and development is indeed feasible during play situations. However, the occurrence of these more in-depth discussions during play was somewhat limited. The majority of these extended types of adult-child interactions were found during educational/emerging academic activities, strongest during science activities (see also Henrichs & Leseman, 2014). Note, however, that in 14 video fragments of educational/emerging academic activities, only five situations with educational dialogues were identified. In view of providing a balanced curriculum in terms of learning content and child-centeredness, providing more science-like activities can be beneficial. Focusing on scientific phenomena, using discovery learning and stimulating children to make connections to daily experiences by providing hands-on activities with ample opportunities for reflection and discussion, can facilitate deeper understanding of the materials and phenomena at hand, while following children's experiences, interests and ideas. However, educators reported to provide comparatively few science activities compared to other curriculum activities.

This relates to another finding concerning educational/emerging academic activities, as the current study has shown that process quality differs in these activities depending on the group size. Smaller group size was found to be related to higher process quality during educational/emerging academic activities as it allowed for more active involvement of children and the possibility to adjust the instructional support to the children's interests and developmental level. In the current study it appeared that, on average, language, literacy and math activities were conducted in larger groups than science activities were. Whether the use of large groups is actually beneficial for all children in the classroom, is an important question, as the in-depth analyses of the educational dialogues illustrated that not all children are equally engaging in these interactions. The current findings are in line with findings in other studies that indicate that large groups can lead to more didactic, educator-directed practices, whereas small groups within the same classrooms elicit more analytic talk and discussion and child-led processes (Lerkkanen et al., 2012; Smith & Dickinson, 1994). Also the use of open-ended questions is less frequent in large groups than in small groups (Pence-Turnbull, Anthony, Justice & Bowles, 2009), and educators of toddlers show less conversational initiations and continuations in large groups compared to small groups (Pellegrino & Scopesi, 1990). Moreover, shared reading in large groups has shown to be less effective in terms of story comprehension than shared reading in small groups (Connor, Morrison & Slominski, 2006; Morrow & Smith, 1990), and that the use of complex language and cognitive distancing strategies (eliciting reasoning) may be equally present in educational dialogues in large and small groups, but that in large groups

proportionally fewer children actively engage in these dialogues compared to small groups (Aukrust, 2008; de Haan, Elbers & Leseman, 2015). Hence, it seems beneficial for children to provide them more often with small group activities to increase children's active participation and learning opportunities. Based on our field notes and video data, educators in this selective sample of good practice centers showed overall flexible group management and divided the day in both large group and small group activities.

In view of enhancing process quality the current case study provides several insights into the type of structural and educator characteristics that are related to better process quality. First, the study illustrates that it is often not a single characteristic that is (consistently) related to better process quality, but rather in combination of several aspects. This indicates that particular favourable structural aspects can compensate for other, less favourable structural aspects. The secondary analyses of data sets from several European studies conducted within the CARE project (Slot, Lerkkanen, & Leseman, 2015) have also illustrated this point. For instance, concerning the core structural characteristics group size and children-to-staff ratio, the results of the current case study showed that both a smaller group size with a less favourable children-to-staff ratio and a larger group size with a more favourable children-to-staff ratio can be related to higher process quality. Moreover, the findings from field notes again revealed that educators of classrooms with an overall larger group size actually provided more activities in smaller subgroups during the day, which in turn was related to higher process quality. This latter finding suggests that organizing multiple educator-guided small group activities during the day within a relatively large classroom can be more beneficial in terms of process quality (and possibly child outcomes) than having predominantly whole group activities in smaller classrooms. It also appeared that in classrooms with a smaller group size, educators reported a stronger focus on play and less emphasis on the provision of self-regulation and educational/emerging academic activities. A possible explanation is that having a larger group requires a more structured and better prepared environment, which in turn might result in higher observed educational process quality.

Regarding the provision of in-service training and continuous professional development, the findings revealed that both aspects are important for educators, as both the provision of in-service training and professional development activities were consistently related to higher process quality and to the provision of a more balanced curriculum of play, self-regulation and pre-academic activities. However, attending additional in-service training was not equally common in all countries. Especially educators with lower pre-service educational qualifications, according to their reports, were less frequently provided with opportunities for in-service training despite the fact that this could benefit especially them in the further development of their professional competences.

Future research can draw on the current findings and extend the research by also including children's developmental and learning outcomes, both in the short term and in the long term. Abundant studies have shown the benefits of high quality interactions on children's cognitive and social-emotional development and later school achievement (e.g. Burchinal et al., 2008; Howes et al., 2008; Mashburn et al., 2008; Melhuish et al., 2015; NICHD ECCRN, 2002; Pakarinen et al., 2016), especially when including curricular aspects as well (de Haan et al., 2013; Kuger & Kluczniok, 2008; Pakarinen et al., 2016; Sylva et al., 2006). Likewise, curricula with a focus on pre-academic skills have shown to be effective in the targeted domains (Clements & Sarama, 2007; Dickinson & Caswell, 2007; Domitrovich et al., 2009; Fantuzzo, Gadsden, & McDermott, 2011; Lonigan, Farver, Philips, & Clancy-Menchetti,

2011), but they may not promote the development of other skills, such as self-regulation, executive functions, creativity, collaboration and citizenship equally well. Comprehensive curricula addressing a broad range of developmental and educational goals have shown to be effective for broad developmental outcomes (Barnett et al., 2008; Bierman, Nix, Greenberg, Blair, & Domitrovich, 2008; Diamond, Barnett, Thomas, & Munro, 2007; Fantuzzo et al., 2011; Lambert, O'Donnell, & Abbott-Shim, 2008; Schweinhart & Weikart, 1997). A balanced curriculum focusing on both 'soft' and 'hard' skills is indeed valued by stakeholders of European ECEC, as the CARE Stakeholders study has illustrated (Broekhuizen et al., 2015). The current findings underline the importance of a balanced curriculum for higher emotional and instructional process quality, but possible effects of quality and curricula also depend on a number of other factors relating to the centers and the children, such as children's family background, the available resources in the home learning environment, and the timing and duration of ECEC attendance. However, structural characteristics of ECEC centers may moderate the effects of process quality and curriculum. As the current study showed, there is a complex interplay of different structural aspects at different levels, including the educator, the classroom and the ECEC organization level, which are all embedded within country-specific ECEC systems. Therefore, future studies should address effects of ECEC quality and curriculum on children's developmental and educational outcomes while including moderators at the child or family level as well as moderators at the center or classroom level.

Limitations

There are several limitations to the current study. First of all this is a multiple case study with a very limited number of selected centers of already good practices from each country. Thus findings cannot be generalized in any way to all European ECEC centers or to specific cultural contexts. Moreover, the use of a multi-method approach was considered necessary to understand the complexity and multidimensional nature of classroom quality and practices. However, the use of self-reports by educators might be biased as well. The use of an observational time-sampling snapshot procedure for example could have had added value to gain a better insight into how children spend their time in the classroom and how involved they are in different activities (Chien et al., 2010; de Haan et al., 2013). A previous study, using a time-sampling snapshot method, has shown that the time used for instruction and guided play is sometimes rather limited, while often quite some time is lost during the day when children are not involved in any activity (de Haan et al., 2013).

Conclusions

To conclude, the current study revealed differences in process quality that could be related to aspects of the provided curriculum, structural characteristics at the educator, classroom, and center level, and the pedagogy and choices educators make on a daily basis in how they educate children, support their broad development and emphasize particular curriculum activities. Altogether, the findings revealed that process quality was highest in classrooms in which educators provided a balanced curriculum of play, self-regulation and pre-academic activities in small groups, at least during part of the day. Further, it appeared that especially educational/emerging academic activities, and hands-on science activities in particular, elicit more extended educational dialogues and can support children's self-regulated learning, language skills and problem-solving as well, thus providing good opportunities for broad learning and development. The provision of in-service training and continuous professional development activities in the centre appeared as most promising in

supporting higher process quality in classrooms.

The aim of the study was to identify common and culturally different key-elements of curricula, pedagogical approaches, process quality and educational dialogues, and to critically review the cross-cultural validity of curriculum and quality assessment systems. Based on the current study it appears that differences in views on what constitutes good quality are relatively minor. All professionals share the importance of a warm, supportive classroom with sensitive educators while seeking a balance in the support of different developmental goals. There emerged also an European perspective on quality and curriculum that values the development of soft skills, and the fostering of peer learning, group belongingness and group sensitivity – aspects of quality that are currently underemphasized in standard assessment instruments such as the CLASS. Evaluating the role of play appeared to be a bit ambiguous when using the CLASS lens. In 0-3 classrooms educators mostly had an active role in guiding and supporting children's play, leading to play of relatively high emotional and educational process quality, whereas in 3-6 classrooms play was often unguided, which resulted in lower process quality scores for the 3-6 classrooms, as determined with the CLASS. This raises an important question whether observation instruments such as the CLASS are sufficiently able to capture the positive aspects of play, in particular children's active role and self-regulation and the opportunities for peer collaboration and peer play.

Differences between countries concern the organization and structural characteristics of ECEC with in some countries a focus on small groups with a single educator and in other countries large groups with multiple educators. The latter allows for more variation in group arrangements during the day that may actually be beneficial in terms of process quality. Common is also the observed and reported struggle of educators to balance educator-directed instruction with stimulating child-led learning, although the current study found many examples of good practice in which educators were able to adopt a highly child-centered approach while at the same time encouraging and facilitating children's learning in classrooms.

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