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Artistic Activities in Crèche and the Quality of Interactions

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ABSTRACT

Research Findings: In this study, we examine specific features of arts-related activities in crèche and its associations with the quality of group and child level interactions. Participants were 31 toddler classrooms and 50 children ($M_{\text{age}} = 30.56$; 52% girls). The quality of group level interactions was observed with the CLASS Toddler and the quality of child level interactions with the inCLASS Toddler. Results revealed that the vast majority of activities were Arts & crafts, conducted in small group, and were open-ended, although substantial variation was found. Findings further showed positive associations between active facilitation and the quality of interactions at both levels. Other activity features, such as the use of hands-on materials, social grouping and open-ended, were also associated with interaction quality. *Practice or Policy:* Results from the current study can inform crèche educators on how to better plan and conduct artistic activities. Arts & crafts activities can become especially fruitful moments for quality interactions, from the group and child perspectives, when the educator acts as a facilitator and co-player, providing materials that children can freely manipulate and giving children the freedom to create products from their imagination. Such suggestions are important to consider in arts-oriented curriculum guidelines for toddlers.

Education through arts in early childhood is widely acknowledged as crucial for child development (Winner, Goldstein, & Vincent-Lancrin, 2013). Throughout Europe, art is part of the curriculum (Sylva, Ereky-Stevens, & Ariescu, 2015) and it has been recently highlighted as one key strategy to promote the skills and attitudes from birth through age 6 that knowledge-based societies require (Winner et al., 2013). In addition, preschoolers' involvement in the arts is associated with receptive vocabulary (Brown, Benedett, & Armistead, 2010), emergent literacy (Phillips, Gorton, Pinciotti, & Sachdev, 2010), emotion expression and regulation (Brown & Sax, 2013), and self-confidence (Kim, Wee, & Gilbert, 2017).

However, the literature characterizing artistic activities in early childhood education is sparse, particularly in comparison to other curricular subjects such as emergent literacy, science or mathematics (Goldstein, Lerner, & Winner, 2017). The scarce existing research is even more evident in crèche, a licensed centered-based day-care provision serving children prior to preschool entry, which in Portugal comprises children from 4 months up to 3 years-old. More specifically, research examining the characteristics of artistic activities and its associations with the quality of educator-child interactions is very limited. Understanding how artistic activities are currently delivered, whether there are similar patterns across classrooms and how these features relate to the interactions that take place during artistic activities can contribute to important knowledge, aiding early childhood educators in taking the most advantage of such moments. This paper intends to shed new light on the quality of interactions at the group and child level during artistic activities in crèches.

Artistic Activities in Early Childhood Education

In early childhood education settings, artistic activities often comprise visual arts, theater, music, and dance (Goldstein et al., 2017; Mills, 2014). In particular, the visual arts consist of opportunities for children to explore and express ideas about color, shape, and form of the visual world (National Endowment for the Arts, 2004). Through visual arts, children experience and reinvent the world, think critically and creatively, communicate and represent ideas and feelings, and develop an esthetic awareness (National Endowment for the Arts, 2004). Visual arts activities usually involve painting and drawing as well as crafting, such as clay modeling, sewing, and building tridimensional artwork. For toddlers, art is often a process of exploration that contributes to self-expression and learning (National Endowment for the Arts, 2004). On the critical importance of visual arts education, the National Art Education Association (2016) has argued that through the visual arts, toddlers can develop a broad array of cognitive skills, learn to value diverse perspectives and cultures and develop new forms of interaction.

In early childhood formal settings across the 0 to 6 age range, artistic activities are very common and artistic pedagogical practices are usually integrated into the pedagogical curriculum (Samuelsson, Carlsson, Olsson, Pramling, & Wallerstedt, 2009). Importantly, whereas available research showed variability in the amount, type and quality of artistic activities provided in pre-school settings (Samuelsson, Sheridan, & Hansen, 2013), the evidence for crèche is very limited, suggesting the need to understand better the kind of dynamic experiences provided to children.

Quality of Interactions at the Group and the Child Levels

The dynamic interactions that take place within the educational settings are considered process-oriented quality features that support child development and learning (Pianta et al., 2005). According to the bioecological theory of human development, daily interactions among educators, children, and materials serve as primary mechanisms through which children develop and learn (Bronfenbrenner & Morris, 2006). Accumulating research has pointed out that the process and dynamic features, such as the daily interactions within the classroom, have a major developmental impact (Hamre & Pianta, 2005; Leal, Gamelas, Abreu-Lima, Cadima, & Peixoto, 2014; Mashburn et al., 2008). These daily interactions within the classroom can be perceived in two complementary levels: (a) the group level, that refers to educators' sensitivity and techniques to facilitate children's learning; (b) the child level, that refers to the extent to which individual children engage positively with the educator, peers, and tasks (Sabol, Bohlmann, & Downer, 2018; Williford, Maier, Downer, Pianta, & Howes, 2013).

In toddler classrooms, group level interactions comprise the emotional climate, educator's sensitivity to children's needs, and the educator's ability to promote children's thinking, reasoning and verbal skills (La Paro, Hamre, & Pianta, 2012). In preschool, a vast literature documents that such group level interactions are associated with children's later school success (Anderson & Phillips, 2017; Burchinal, 2018; Leyva et al., 2015; Silinskas, Pakarinen, Lerkkanen, Poikkeus, & Nurmi, 2017; Slot, Bleses, Justice, Markussen-Brown, & Højen, 2018). In toddler classrooms, recent research from the USA has also highlighted the importance of group level interactions. For example, toddlers enrolled in classrooms where educators were emotionally responsive and supported children's learning and development had fewer behavior problems, as reported by their educators (La Paro, Williamson, & Hatfield, 2014). Results from another study, with Early Head Start services (a compensatory program provided in the USA) suggested that when 2 years-old children were engaged in high-quality group level interactions, they achieved better observed language outcomes at age 3 (Bandel, Aikens, Vogel, Booler, & Murphy, 2014).

Child level interactions refer to child individual engagement and interactions with educators, peers, and tasks (Slot, Bleses, & Downer, 2016). Children's positive interactions with educators and peers are characterized by high levels of emotional connection, attunement, shared positive affect and sustained communication. Children's engagement with tasks refers not only to focus, but also to

child persistence, and self-reliance during classroom activities. In preschool, an emerging body of literature has started to show that individual child interactions with educators, peers, and tasks are critical to their academic and social outcomes (Booren, Downer, & Vitiello, 2012; Downer, Booren, Lima, Luckner, & Pianta, 2010; Sabol et al., 2018; Williford, Whittaker, Vitiello, & Downer, 2013). In crèche, although the importance of toddlers' engagement has been acknowledged in several studies (e.g., Aguiar & McWilliam, 2013), its study is much more limited. The current study investigates both group and child level interactions in artistic activities by observing educators' overall interactions with the group and toddlers' individual interactions with educators, peers, and tasks.

Activity Setting and Artistic Activities

Recent studies have started to look at classroom features that might affect the quality of interactions (Booren et al., 2012; Cabell, DeCoster, LoCasale-Crouch, Hamre, & Pianta, 2013). Characteristics related to the activity setting, such as levels of adult involvement (Howes & Smith, 1995; Kontos, 1999), materials, activity content, and social grouping (Cabell et al., 2013), have been shown to be important for better understanding educator-child interactions throughout the day. Regarding adult involvement, it has been shown that educators adjusted their levels of involvement according to the type of activity (Kontos & Keyes, 1999). For instance, past research has shown that educator's presence in the activity facilitated children's involvement both in crèche (Howes & Smith, 1995) and preschool (Howes & Smith, 1995; Kontos, 1999).

The importance of providing a wide variety of rich hands-on experiences has been emphasized in framing documents on the field of visual arts education for young children aged 0 to 6 (McClure, Tarr, Thompson, & Eckhoff, 2017). Stipek and Byler (2004) suggested that providing rich, hands-on experiences to children, and making available materials for children to use may facilitate children's interest and levels of engagement.

Small-group activities are believed to bring countless benefits (Wasik, 2008), even though the research evidence is mixed (Cabell et al., 2013; Chen & Kim, 2014). For example, research conducted in USA preschools has suggested that educators' instructional interactions were higher in the large group setting, compared to free choice activities and meals, that normally occurred in smaller groups (Cabell et al., 2013). In another study, Chen and Kim (2014) concluded that the quality of preschool educators' verbal interactions was higher during large-group activities when compared to small-group activities. However, in these studies, it was not possible to disentangle content from social grouping, since activities with academic content occurred mainly through large group whereas meals or play occurred mainly in small group settings. In this study, we compared different social arrangements within the same content, which may help to scrutinize the role of social grouping. Furthermore, we know little about the role of adult involvement and small group in toddler activities, underscoring the need for further research with toddlers.

The literature on artistic activities has also characterized visual arts activities as open-ended or, rather, product-oriented (Howes & Smith, 1995; McClure et al., 2017). Open-ended artistic activities are considered to provoke competent or complex behaviors, meaning that during visual arts that allow children to express themselves freely, child behavior can go beyond functional purposes (Mills, 2014). A study conducted in the UK with a small playgroup of preschool-aged children suggested that when children were provided with open-ended activities, without a predefined end-point, they were able to influence the course of the activities aligned with their interests (Ireson & Blay, 1998), which allowed them to develop more complex interactions. In the latter study, results suggested that child imagination and divergent thinking were promoted when the child acted as an active co-constructor along with the educators throughout the activity (Ireson & Blay, 1998). Moreover, results from a study conducted in USA preschools suggested that open-ended tasks were associated with higher self-regulation skills and the use of self-directed language, possibly because children needed to guide their behavior toward a goal and continually redefine and update that goal (Krafft & Berk, 1998). In the same line, open-ended artistic

materials are believed to provide a variety of options (Szyba, 1999), which can promote children's creative self-expression (Kim et al., 2017), problem resolution, and critical thinking (Maynard & Ketter, 2013).

Nevertheless, not all artistic activities provide rich, creative experiences, as educators seem to use very different approaches (Szyba, 1999). In fact, even though the few studies available in preschool suggested that artistic activities vary greatly in the type and quality of experiences, there seems to be a tendency toward educator-centered, product-oriented activities. For instance, Kim et al. (2017), in a study conducted with preschoolers in the USA described children's regular artistic activities as being educator-led, product-oriented, with limited options in terms of experiences and materials. Similarly, in Singapore preschools, artistic activities were mostly educator-led, focusing on product-oriented instructions, with limited access and availability to arts-related activities and materials (Bautista, Moreno-Núñez, Bull, Amsah, & Koh, 2018). Also, in Turkish preschools, Kocer (2012) revealed that even when artistic activities were focused on children's creativity and imagination, most activities were product-oriented and educator-centered, with the educators leading and deciding the activities in which children were engaged. This body of research highlights how early childhood educators' approaches to artistic activities may influence children's levels of engagement with these activities (Booren et al., 2012), underlining the need to examine the links between artistic activities in crèche and the quality of child-context interactions.

The Present Study

In the present study, the first goal was to characterize the artistic activities according to several features, namely, levels of adult involvement, materials availability and access, social grouping, and open-ended vs. product-oriented activity. We aimed at understanding how educators organized and structured artistic activities in crèche, the materials they used and the approached content, and the extent to which variation or specific patterns could be identified. The second goal of this study was to explore the associations between those characteristics and the quality of the interactions during artistic activities, both at the group and the child levels. Based on previous studies (e.g., Curby, Downer, & Booren, 2014), we expected to find higher levels of both group and child interactions in activities with higher levels of adult involvement, higher use of hands-on materials, higher participation in open-ended activities, and conducted in small groups.

Method

Participants

The present study was developed within a larger study, aimed at examining the quality of educator-child interactions in association with activity settings in toddlers' classrooms.

For this project, 31 toddler classrooms from 23 Portuguese centers were selected. In the majority of the centers ($n = 17$, 74%), one classroom per center was observed; in five centers (22%), two classrooms were observed; and in one center (4%), four classrooms were included. Centers were recruited to have geographic variability, involving two large urban areas and one rural area. A set of criteria was established to select the centers: (a) centers were considered to be of high quality, according to experts' judgments (e.g., innovating practices, collaboration with universities, participation in previous research projects); (b) centers were required to be aligned with national guidelines regarding structural characteristics (e.g., group size, level of educator education). In each center, all toddler classrooms (i.e., serving 2 year-olds) were selected to participate in the study. Ten (43%) of the 23 centers were from the metropolitan city of Porto, six (26%) were from the metropolitan city of Lisbon, and seven (30%) were located in the rural, mid-west region of the country. Of the 23 participating centers, 52% ($n = 12$) were nonprofit and 48% ($n = 11$) were for-profit. Descriptive statistics for educators and classroom demographics are presented in Table 1. Regarding classroom characteristics, the number of children ranged from 8 to 23 children per group ($M = 16.42$, $SD = 3.26$), and the number of adults varied between 1 and 4 ($M = 2.19$, $SD = 0.79$).

Table 1. Descriptive statistics for educators, classroom demographics, CLASS and inCLASS.

	<i>N</i>	%	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Educators characteristics						
Female	30	96.77				
Male	1	3.23				
Age (years)	27		40.15	8.02	26	56
Years experience	21		12	6.17	2	24
Highschool	1	3.6				
Masters' degree in ECE	11	39.3				
Bachelors' degree in ECE	16	57.1				
Classroom characteristics						
Group size	26		16.42	3.26	8	23
Adults	27		2.19	0.79	1	4
CLASS						
Emotional and Behavioral Support	31		5.03	1.05	3	6.60
Engaged Support for Learning	31		3.40	1.21	1.33	5.67
inCLASS						
Interactions with Educators	50		4.38	1.24	1.50	6.50
Interactions with Peers	50		3.19	0.91	1.67	5.33
Task Orientation	50		4.91	0.93	2.50	6.00

Children's age group ranged from 1 to 3 years of age. Participating educators were the leading teachers for most of the classrooms ($n = 29$, 94%), with two exceptions. In one classroom the activity was conducted by an assistant (3%) and in another classroom by the music teacher (3%). The majority of educators were female ($n = 30$; 97%). Educator's age ranged from 26 to 56 years old ($M = 40.15$, $SD = 8.02$). Concerning educator's pre-service qualifications, the majority ($n = 16$; 57%) had a bachelor/licentiate degree, 11 (39%) held a master's degree, and one reported high school as education level. Regarding children, from a initial random sample of 10 children per classroom, for this study a sample of 50 children (23% of the total sample) was selected because they were the children for whom video data on interactions at the child level were available. Children's age ranged from 19 to 36 months ($M = 30.56$, $SD = 4.12$), and 52% ($n = 26$) were girls. Child characteristics were similar to the largest sample ($N = 217$) regarding sex, $\chi^2(1) = .204$, $p = .756$, and age, $t(266) = -1.75$, $p = .082$.

Procedures

In the participant centers, meetings were organized with educators and center directors to inform and discuss the goals and procedures of the project. Before data collection, informed consents from the adults in the classrooms and children's parents were obtained. The informed consents contained detailed information on the project as well as the ethical procedures taken into account to assure confidentiality of data collection and analysis. The consents were approved by the Portuguese National Commission of Data Protection. Educator's demographic information (e.g., age, education, experience) and group composition (e.g., number of children per group, children's age, number of adults per classroom) were gathered through questionnaires for the leading educators.

For the current study, visits to centers occurred during spring, between January and April, across two mornings, for approximately 2 hours per morning. In each classroom, one artistic activity was observed and video recorded. In the current study, we only focused on the artistic activities that were videotaped. Before video observations, educators were informed about the activities to be videotaped and were asked to conduct them as usual, as close to the toddler's daily routine as possible, involving the adults who usually interact with the group. Educators were free to choose the format, structure, and content of the activities. Throughout the observations, the observers discussed with the educators whether they felt comfortable with the filmed videos, giving them the option of recording another video, which did not happen for any of the artistic activities videotaped. During the filming,

researchers took extensive field notes and registered relevant information concerning the activity or the setting.

Videos were then scored independently using the observational tools to assess activity setting and the quality of group and child level interactions. For the activity setting measure and the group level interaction quality measure, the first 15 minutes of each video were scored by trained observers. For the individual interaction quality measure, all children who were visible for at least 8 minutes from the entire length of the video were selected, and their individual interactions scored. Each activity was watched as many times as the number of selected children in that particular activity. Each of the observational tools used in this study involved extensive observer training. For the interaction quality measures, observers participated in a training course provided by a certified trainer, involving manual readings and videotaped observations, as well as reliability testing via master-coded videotapes. All observers passed the reliability tests with within one-scale point of at least 80% of the master-code. For the activity setting measure, the training involved videotaped observations for practice purposes and reliability testing consisting of five videos independently coded by each observer to reach at least 80% of interobserver agreement.

Measures

Activity Setting

The Activity Setting Measure was developed within the current research project to capture and characterize observable aspects of the activities concerning their configurations, group organization, and characteristics. A literature review was undertaken to develop the measure. Through EBSCO and other scientific databases, a search for publications was conducted, using the following keywords: activity setting; activity type; typical day; day organization; structured activity; teacher oriented activity; teacher-guided; teacher-led; pre-academic activity; time organization/management; free play; routine; creativity/creative/arts; meals. These keywords were crossed with the keywords kindergarten, preschool, daycare, and early childhood education. This search resulted in 84 initial publications. Only studies that used observational measures were selected, and a total of 10 useful observational measures were retained (Chien et al., 2010; Early et al., 2010; Enz & Christie, 1993; Farran, Bilbrey, Vorhaus, & Meador, 2014; Fuligni, Howes, Huang, Hong, & Lara-Cinisomo, 2012; Harms, Cryer, & Clifford, 2012; Howes & Smith, 1995; Ritchie, Weiser, Kraft-Sayre, Howes, & Weiser, 2011; Sylva et al., 2007; Wilcox-Herzog & Ward, 2004), analyzed thoroughly, and used as starting points to develop categories for the new measure.

Following the literature review, initial, broad categories were assembled and registered. Field notes were taken during live observations, followed by content analyses to create more accurate response options of the categories, as well as to clarify and refine definitions. The final version of Activity Setting Measure is comprised of six domains, namely: Adult Involvement, Activity Content, Materials (content – which kind of materials were available –, and hands-on – what percentage of children were manipulating materials), Social Grouping, Open-ended and Location of the Activity.

The Adult Involvement domain concerns the role taken by the educator during the activity, that is the extent to which the educator is involved in interactions with children. This measure is an adaptation of the Adult Involvement Scale (Howes & Smith, 1995), which assesses the increasing involvement and complexity in adult-child interactions. For each 30-seconds interval, the Adult Involvement dimension was categorized as either: (a) Non-involved, when the educator did not engage in interactions with children and stayed out of the children's activities; (b) Passive, when the educator helped or assisted children without engaging in interaction or conversation with them; (c) Active-Responsive, when the educator merely nodded or responded to children without adding or enriching, scaffolding, or extending; (d) Facilitator, when the educator engaged in reciprocal conversations and/or played interactively with children, gave children suggestions regarding their activity, and when educator-child interactions included scaffolding, extending, discussing, questioning and modeling, back and forth exchanges and responding to children repeating what was said; or

(e) Active-Directive, when the educator introduced new elements into the activity, instructed children regarding their actions, gave directions on what children should do and directed actions and dialogs. A final percentage for adult involvement was calculated based on the number of cycles, up until 30 cycles for a video with 15 minutes length. The categories were mutually exclusive.

The Materials category refers to the materials available during the activity, including content and the percentage of children that are using these materials. In the current study, for content of the arts activities, the available categories were Arts & crafts and Others. The proportion of children using hands-on materials was coded according to four intervals (0–24%; 25–49%; 50–74%; 75–100%) in each 30-seconds interval of the activity. A final percentage for each interval was calculated based on the total number of cycles, up until 30 cycles for a video with 15 minutes length.

Social Grouping represents the kind of grouping predominant in the activity, which was categorized according to the following criterion: (a) whole class, when the activity was provided for all children; (b) whole/small group, when the activity was provided for all children, but children were organized in small groups with less than seven children per group; (c) small group, when a small group of three to six children was involved in the activity; (d) individual/pairs, when one or two children were involved in the activity; (e) free, when children moved freely around the classroom.

The Open-ended domain is applicable when the activity is arts-related, or a product is expected from children's actions. This category represents whether the activity is open-ended or product-oriented. For open-ended, there was no model intended or acceptance requirement to the finished product, for example, play dough or painting and drawing freely, with no instructions on how to use materials and no specific model representing what the final project should look like. Product-oriented activities occurred when the educators directed art activities, or involved children in art with models, such as coloring books or painting and drawing with clear and specific instructions, as well as showing children how their final projects should look like.

For each videotaped activity, observers watched the first 15 minutes and coded the six dimensions. Two dimensions – Adult Involvement and Hands-on Materials – were coded for each 30-seconds interval, for the entire 15 minutes, ending up with a total of 30 cycles. Shorter videos were coded for its entire length and cycles according to each video duration. A final percentage for Adult Involvement and Hands-on Materials dimensions was calculated based on the number of coded cycles. The remaining domains were coded at the end. For reliability purposes, 25% of the videos were double coded. Inter-coder reliability was evaluated with Cohen's Kappa for nominal variables and the Weighted Kappa for ordinal variables. Inter-coder reliability was considered adequate for all dimensions: Adult Involvement, weighted kappa = .73; Hands-on activities, weighted kappa = .93; Social Grouping, kappa = .96; Open-ended activities, kappa = 1.

Group Level Interactions

The Classroom Assessment Scoring System (CLASS Toddler; La Paro et al., 2012) was used to observe the quality of educator-child interactions in classroom settings. This instrument uses a 7-points scale to measure eight dimensions of educator-child interactions categorized into two broad domains: Emotional and Behavioral Support and Engaged Support for Learning. The score for each dimension is based on descriptors provided in the manual (scores 1 and 2 are considered low, scores 3 to 5 are considered midrange, and scores 6 and 7 are considered high).

The Emotional and Behavioral Support domain consists of five dimensions, namely, Positive Climate, Negative Climate, Teacher Sensitivity, Regard for Child Perspectives, and Behavior Guidance. This domain encompasses the emotions expressed in the classroom, the degree to which the educator demonstrates sensitivity and responsiveness toward children's needs, the educator's consideration of children's perspectives and the promotion of children's independence and autonomy, and the way the educator manages children's behavioral regulation to meet classroom's expectations. The Engaged Support for Learning domain consists of three dimensions: Facilitation of Learning and Development, Quality of Feedback, and Language Modeling. Engaged Support for Learning reflects educator's facilitation of activities to promote children's learning and development, the educator's use of specific

feedback to promote learning and expand children's participation and educator's use of language-stimulation and facilitation techniques to encourage children's language development.

The CLASS Toddler has shown concurrent and predictive validity (La Paro et al., 2014). For this sample, confirmatory factor analyses were performed, with results supporting the two-factor model, $\chi^2(19) = 22.087$, $p = .28$, CFI = .990, TLI = .985, SRMR = .025, RMSEA = .072. Internal consistencies for both Emotional and Behavioral Support and Engaged Support for Learning were excellent, Cronbach's alphas = .94 and .92, respectively. For the double-coded videos, interrater reliability was adequate (ICC = .66).

Child Level Interactions

The Individualized Classroom Assessment Scoring System (inCLASS; Downer, Booren, Hamre, Pianta, & Williford, 2011) was used to assess children's interactions with educators, peers, and tasks or learning activities. This measure comprises ten dimensions organized into three domains: Interactions with Educators, Interactions with Peers, and Task Orientation. All the dimensions were scored using a 7-points Likert scale, based on behavior descriptors (scores 1 and 2 are considered low, scores 3 to 5 are considered midrange, and scores 6 and 7 are considered high).

The domain Interactions with Educators includes the nature and quality of children's interactions with the educator and comprises: (a) Positive Engagement, that measures the emotional connection to the educator; (b) Communication with Educator, referring to child initiation and maintenance of conversations with the educator; and (c) Conflict with Educator, that refers to the degree to which child's interactions with the educator are characterized by negativity. The domain Interactions with Peers assesses children's initiation and maintenance of relationships with peers, and it encompasses: (a) Sociability with Peers, that is, the child's emotions and behaviors toward other children; (b) Communication with Peers, that measures the child's initiation and maintenance of communications with peers; (c) Assertiveness with Peers, which refers to the strategies the child uses to initiate and lead interactions with other children; and (d) Conflict with Peers, the degree to which the child's interactions with peers are characterized by negativity. Task Orientation encompasses the child's approach to tasks, specifically: (a) Engagement within Tasks, which measures how the child is active and consistently involved with classroom activities; (b) Self-Reliance, that refers to the degree to which the child takes learning into his/her own hands; and (c) Behavior Control, referring to child's regulation of his/her behavior to match the classroom's expectations.

Construct and criterion validity have been established for the inCLASS Pre-K (Downer et al., 2010; Slot & Bleses, 2018; Williford et al., 2013). However, to our knowledge, the psychometric properties of the inCLASS Toddler have not been examined yet, and therefore, an exploratory factor analysis (EFA) was conducted to determine the measure's underlying factor structure. Three dimensions were excluded from the analyses. The dimensions Conflict with Educator and Conflict with Peers showed highly skewed distributions, and the dimension Behavior Control had very low correlations with the remaining dimensions. Following the procedures by Downer et al. (2010), an EFA with an oblique rotation was performed using the remaining seven dimensions. A three-factor model for children's interactions was obtained: Interactions with Educators (Positive Engagement and Communication); Interactions with Peers (Sociability, Communication, and Assertiveness) and Task Orientation (Engagement and Self-reliance). All loadings were equal or greater than .70, explaining a total of 86% of data variance. Internal consistencies were good for the three domains, respectively, for Teacher Interactions (two items), Peer Interactions (three items) and Task Orientation (two items), Cronbach's $\alpha = .86$, $\alpha = .89$ and $\alpha = .84$. For the double-coded videos, interrater reliability was adequate (ICC = .83).

Data Analysis

Preliminary analysis and descriptive statistics were conducted in the Statistical Package for the Social Sciences (SPSS, version 21). Regression models were performed using Mplus, version 7, using the

full-information maximum likelihood approach to account for missing data (Graham, 2009; Schafer & Graham, 2002). Models were run addressing the nesting nature of data (e.g., several children within the setting) and, when appropriate, controlling for child age and sex, and the number of children involved in the activity. Based on preliminary analysis, some of the categories were merged, namely Hands-on intervals (0–24% and 25–49% merged into 0–49%; 50–74% and 75–100% merged into 50–100%) and Social Grouping (whole class and whole/small groups merged into Whole; small group and individual/pairs merged into Small Group).

Results

Descriptive and Preliminary Analysis

Descriptives for the CLASS and inCLASS are presented in Table 1 and for activity settings in Table 2. Descriptive statistics showed educators were actively involved throughout the activity, either facilitating it ($M = 55.78$, $SD = 33.52$) or directing it ($M = 27.15$, $SD = 27.33$), although there was a large variation across classrooms. Children spent nearly half of the time with hands-on materials ($M = 61.23$, $SD = 37.31$). The vast majority of activities occurred in the classroom and were arts & crafts (87%), namely painting, coloring, drawing, modeling with plasticine or clay, and cutting and pasting shapes and figures on paper. Activities were mainly conducted in small group (63%), and most of them were open-ended (76%).

Educator-child interactions at the group level were in the mid-high range for Emotional and Behavioral Support, and in the mid-low range for Engaged Support for Learning. Regarding child level interactions, ratings for children's interactions with educators and tasks were mostly in the mid-range and for children's interactions with peers in the mid-low range. There were some associations between features of the activity setting, namely that more time spent facilitating was positively associated with small group, $r = .42$, and open-ended activities, $r = .31$, whereas more time spent directing was negatively related to small group, $r = -.52$, and time spent with hands-on materials, $r = -.42$.

Table 2. Descriptive statistics for activity setting.

	N	%	M	SD	Min	Max
Adult involvement (%)						
Non-involved	31		.87	2.28	0	10
Passive	31		11.84	14.74	0	50
Active	31		82.93	17.87	37.50	100
Facilitator	31		55.78	33.52	0	100
Directive	31		27.15	27.33	.00	86.67
Non-Applicable	31		4.36	5.80	.00	23.33
Content						
Arts	31	100				
Arts & crafts	27	87.1				
Others	4	12.9				
Materials						
Arts & crafts	27	87.1				
Other	12	38.7				
Hands-on material (%)						
0–49%	31		38.77	37.31	0	100
50–100%	31		61.23	37.31	0	100
Social grouping						
Whole	11	36.7				
Small	19	63.3				
Structure						
Open-ended	22	71				
Product oriented	7	22.6				
Other	1	3.2				
Non-applicable	1	3.2				

Activity Settings and Group Level Interactions

Regression models (see Table 3) showed that, when educators spent more time actively facilitating the activity, the Emotional Behavior and Support was higher, $B = .44$, $p = .001$, as well as the Engaged Support for Learning, $B = .62$, $p < .001$, even after controlling for the number of children in the activity. In contrast, more time spent in directive involvement was negatively associated with Emotional Behavior and Support, $B = -.37$, $p = .001$, and Engaged Support for Learning, $B = -.49$, $p = .001$. More time spent with hands-on materials was positively associated with Emotional and Behavior Support, $B = .32$, $p = .050$. The Emotional and Behavior Support was also higher when the activity was conducted in small groups or pairs, $B = .41$, $p = .007$. Open-ended activities were also positively associated with both Emotional and Behavior Support and Engaged Support for Learning, $B = .55$, $p < .001$ and $B = .38$, $p = .017$, respectively, after controlling for the number of children in the classroom.

Activity Settings and Child Level Interactions

Regression models (see Table 4) showed that, when educators spent more time in directive involvement, Task Orientation was lower, $B = -.16$, $p = .027$. In contrast, children were more involved with the task and spent more time actively involved with the educator when the educator was facilitating the activity, $B = .20$, $p = .006$, and $B = .33$, $p = .006$, respectively. Children were also more involved with the educator in open-ended activities, $B = .37$, $p < .001$. And last, children were more engaged with their peers when the amount of time with hands-on materials increased, $B = .22$, $p = .049$. These results highlight that several features of arts-related activities may contribute to higher levels of interactions.

Table 3. Associations between the CLASS and activity setting (N = 31).

	Emotional and Behavioral Support		Engaged Support for Learning	
	β	SE	β	SE
Adult involvement ^a				
Directive	-.37*	.14	-.49*	.14
Facilitator	.44*	.13	.62*	.11
Hands-on materials	.32*	.16	.17	.17
Social grouping ^b	.41*	.15	.05	.18
Open-ended activities ^{a,c}	.55*	.12	.38*	.16

* $p < .05$.

^aCovariate: number of children in the activity.

^b0 = whole group; 1 = small group.

^c0 = product oriented; 1 = open-ended.

Table 4. Associations between the inCLASS and activity setting (N = 50).

	Interactions with Educators		Interactions with Peers		Task Orientation	
	β	SE	β	SE	β	SE
Adult involvement ^a						
Directive	-.24	.13	.10	.15	-.16*	.07
Facilitator	.33*	.12	-.15	.15	.20*	.07
Hands-on materials	-.03	.17	.22*	.11	.04	.14
Social grouping ^b	-.07	.15	-.21	.12	.12	.11
Open-ended activities ^{a,c}	.37*	.09	-.19	.11	.14	.10

* $p < .05$.

^aCovariate: number of children in the activity.

^b0 = whole group; 1 = small group.

^c0 = product-oriented; 1 = open-ended.

Discussion

The present exploratory study was guided by two main goals: (a) characterize the artistic activities according to several features, namely, levels of adult involvement, materials, and social grouping; (b) explore the relationship between those characteristics and the quality of interactions at the group and the child levels. Findings indicated some positive associations between the quality of educator-child interactions, and higher levels of adult involvement, higher use of hands-on activities, small group and open-ended activities. Together, these findings support the notion that certain aspects of the activity setting can be important for the quality of interactions for both levels.

Characteristics of Artistic Activities

Results showed great variation in the artistic activities, in terms of the levels of adult involvement, social grouping, the structure of the activity (open-ended vs. product-oriented) and the use of hands-on materials, which resulted in a variety of experiences. Interestingly, although we found variability in all mentioned aspects, regarding the structure of the activity, the majority of activities was characterized as open-ended, which contrasts with prior studies in preschool (Bautista et al., 2018; Kim et al., 2017). It is possible that in crèche, educators give more freedom for children to explore materials according to their preferences, but as this study is one of the first conducted in crèche, more research is needed to support this claim.

Adult Involvement

As expected, educators who facilitated the artistic activities, acting as co-players and engaging in back and forth interactions with children, were more likely to be more warm, sensitive and to actively promote children's reasoning and thinking at the group level. When educators engaged as facilitators, individual children also showed greater evidence of enjoying interactions with their educators and being more focus in tasks. Inversely, when the educator assumed a more directive role, educator-child interaction at the group-level, as well as children's orientation toward the task, seemed to decrease. These results highlight the importance of educators involvement during artistic activities, in line with previous research (e.g., Howes & Smith, 1995; Kontos, 1999). The way educators involved themselves with children during artistic activities mattered, and reciprocity in interactions, such as engaging in back and forth interactions and playing interactively, played a central role.

Hands-on Materials

Classrooms where children had more opportunities to have hands-on materials were also higher on warmth and closeness between educator and children at the group level, but also higher on peer interactions at the child level. Previous studies have suggested that during creative activities, children engaged in complex interactions with their peers and materials (Kontos, Burchinal, Howes, Wisseh, & Galinsky, 2002). Previous studies with preschoolers have also shown the interplay between warmth and closeness in the classroom and opportunities for all children to manipulate materials (Kontos et al., 2002). The current study adds to these empirical findings by suggesting one possible reason for why artistic activities may foster peer interactions, pointing out to the importance of providing multiple materials so children can manipulate and use them freely. It is possible that hands-on materials presented an opportunity for children to engage with peers, having conversations about the materials, and about the process of creating. It is also possible that having materials available for the majority of children reduces possible conflicts and increases the emotional connection between peers. The results from the current study also extend prior research conducted with preschoolers by showing that hands-on activities are relevant for toddlers as well.

Social Grouping

When artistic activities were provided in small groups, educators were more likely to establish close and warm interactions with children, independently of class size. Our results are aligned with previous research establishing links between smaller group sizes and educators' positive caregiving behaviors (Burchinal, Cryer, Clifford, & Howes, 2002; Mashburn et al., 2008; NICHD Early Child Care Research Network, 2000; Vandell, 1996). Previous studies with preschoolers have suggested that artistic activities are mostly conducted in large group settings (Cabell et al., 2013). In the current study approximately 63% of the observed artistic activities were conducted in small groups, meaning that educators may recognize the benefits of such social organization, along with the advantages of small groups in terms of the quality of interactions at the group level. Such difference between studies could rely on the fact that preschool and crèche educators organize artistic activities differently.

Open Ended

When artistic activities had an open-ended structure, educators were better able to engage in close interactions with children and to stimulate the thinking and reasoning at the group level, and children also seemed to enjoy more the interactions with their educators, in comparison to product-oriented artistic activities. Previous studies have suggested that creative activities, including fantasy play, blocks and open-ended artistic activities, are linked to higher global classroom quality (Howes & Smith, 1995). Our results add to this line of enquiry by analyzing the specificity of the artistic activity regarding children's degree of freedom to create according to their imagination or, rather, according to previous instructions or models. When children were given an active role and could influence the direction and focus of the activity, the educators were more sensitive, responsive, and engaged in cognitively stimulating interactions with children. At the child level, it seems that when children were given the control over the process and the product in artistic activities, there were more conversations and evidence from enjoyment in individual child interactions with their educators. It is possible that when the activity did not have an intended finished end, the child connected more with the educator, using her/him as a resource and a secure base to validate the child's choices. The current study reinforces the importance of exploratory and open-ended artistic activities with no predetermined end, not only in preschool, but also in crèche (McClure et al., 2017).

Interestingly, at the group level, all activity features examined showed links with the Emotional and Behavioral Support domain of the CLASS, while the domain Engaged Support for Learning appears to be more closely related to the educator's role during the activity, such as facilitating the activity and providing open-ended activities, which require educators to act as co-constructors and engage in reciprocal interactions. Prior studies have suggested that developing and sustaining high levels of Engaged Support for Learning may be challenging for educators (La Paro, Pianta, & Stuhlman, 2004). Our findings are aligned with this view by suggesting that it seems to be the educators' role and his/her intentionality that can better support stimulating interactions that scaffold child learning, while the use of materials or small groups is not directly linked with such thought-provoking interactions. At the child level, with the expectation of adult involvement, the associations between activity features and child interactions with educators, peers, and tasks, were just a few. It can be that the features of the activities that were examined are more closely linked to the overall emotional and behavioral climate, rather than to the individual child. Nevertheless, we have found interesting patterns of associations that bring new insights on artistic activities and deserve further attention.

Findings from this study highlight how educator's choices in artistic activities are associated with different patterns of interaction quality. There are abundant claims that artistic activities can advance the development of thinking and communication skills (Brown & Sax, 2013; Maynard & Ketter, 2013). However, it seems that to ensure these skills are met, one cannot overlook the characteristics and quality of the activities being delivered. Indeed, findings from this study highlight the need to systematically

observe the quality of artistic findings: the quality not only varied greatly across classrooms, but also arts do not seem to ensure *per se* high levels of quality. Thus, considering that only few studies have carefully observed the types and the quality of the classroom processes, it seems crucial to develop more observational studies in order to obtain an accurate portray of the potential benefits of artistic activities and, importantly, of their specific characteristics that may foster child learning.

Implications for Practice

Findings from this study support the relevance of educator involvement as a facilitator, the appropriateness of open-ended tasks, the importance of hands-on materials, and the potential usefulness of small groups. Importantly, our findings highlight the unique role of the educator. While creating an “art corner” can be a way to provide children with materials and freedom to explore them in small groups (National Endowment for the Arts, 2004), our results point out that the educator’s involvement as a facilitator enriches the kind of interactions taking place, contributing to pleasure and enjoyment, and helping children to be more focused and persistent. Interestingly, the observed classroom features were somewhat interrelated, suggesting that when the activity is conducted in small groups, more time is spent on active facilitation and in giving children the freedom to choose the direction of the activity. Knowing which activity settings promote quality in interactions at the group and child levels may provide educators with information on how to plan and conduct these activities to ensure their effectiveness.

It is worth mentioning that the vast majority of activities were visual arts & crafts. It is possible that leading educators develop more frequently the kind of artistic activities they feel more confident. For example, Bautista et al. (2018) argued that many preschool educators may lack training, skills, and knowledge in specific art-forms, which may restrain them from developing certain art-forms within their classrooms. This highlights the importance of developing target professional development initiatives for educators to promote the skills, knowledge, and self-confidence they need to conduct several arts-related activities. Also, while arts-specific content may be indeed crucial for children, our findings point to the importance of addressing simultaneously other features of the classroom context in professional development as well, such as the role of group configuration and available materials, so that artistic activities can be of high quality.

Limitations and Future Research Directions

The results presented in this study should be interpreted in light of several limitations. First, concerning the sample size, the sample used in this study was small. Future research would benefit from a larger sample to determine the generalizability of the findings. Also, our findings focus on just a few of all the artistic activities that are conducted in crèches, since we observed activities conducted frequently by the leading educators, resulting in a limited variation of art-forms. In crèche, there may be other artistic activities besides the ones observed, namely dance or music activities, usually conducted by specialized professionals, although they do not occur as regularly as arts & crafts. It would be enriching to learn more about other artistic activities and their associations with activity settings and the quality of interactions. Furthermore, it would be interesting to examine the esthetic quality of the activities, which would add information to the intrinsic quality of artistic activities.

It is also worth mentioning that, in this study, the activities were analyzed through videos, which may present a few constraints. Also, only one video was scored per classroom. It would be interesting to replicate the observations of several artistic activities in the same classroom, to achieve a deeper understanding of these activities and the impact that different settings would have on the group or individual interactions.

Despite all these constraints, it is clear the importance of continuing studying the characteristics and the interaction quality of artistic activities. Even though the arts-related activities are widely acknowledged as providing a rich and unique platform for child development, we still know very

little about how to make sure that the potential of artistic experiences is fully accomplished. This study takes a first step into looking at the artistic activities in crèche and shows, on the good side, that even though there is great variability, artistic activities are indeed part of the routine of the Portuguese toddlers.

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