Master's thesis

F. van Lochem

The Quality of Individual Interactions and the Social-Emotional Development of Toddlers

Master's thesis
Utrecht University
Master program Clinical Child, Family and Education Studies
Name : Femke van Lochem, BSc
Student number : 4156803
Thesis supervisor : Elyse van de Riet, MSc
Second assessor : Dr. Ilona Friso-van den Bos
Date : 26/05/2017
Word count : 4892

Abstract

Introduction. Early childhood education and care can contribute to the social-emotional development of toddlers. The aim of this quantitative observational study is to expand knowledge regarding the influence of the quality of children's interactions (children's experiences with teachers-, peers- and tasks) at early childhood education centers. The second aim is to gain insight in the underlying structure of the inCLASS observational instrument. **Methods.** A sample of 120 children attending Dutch early childhood education and care were observed to investigate the underlying factor structure and reliability of the inCLASS. The inCLASS is an observational instrument that measures the quality of children's individual interactions. Additionally, a total sample of 68 children of 28 classrooms participated in this study to examine the effects between children's interactions and their social-emotional development. In addition, the teachers filled in a questionnaire to gain insight in the social-emotional development of the children. **Results.** The quality of all types of children's interactions together contribute significantly to the social-emotional development of toddlers, as well as the quality of interactions with the teacher. Gender plays a moderating role in these relationships. Finally, evidence for a two-factor structure was found for the inCLASS. However, based on previous research, a four-factor structure was used in the current study. **Conclusion.** It was expected to find evidence for a four-factor structure of the inCLASS. However, little evidence for this factor structure was found. Therefore, the results of the current study should be interpreted with caution due to low reliability of the inCLASS. Altogether, the current study contributes to the knowledge of how individual children experience the quality of interactions and how these interactions influence the social-emotional development.

Keywords: inCLASS, social-emotional development, children's interactions, preschools, early childhood education, daycare centers.

The Influence of the Quality of Interactions on the Social-Emotional Development of Toddlers

In 2014, 79% of all children between 2.5 and 4 years old went to some form of early childhood education or care (ECEC) (Asscher, 2014). This amount will only grow in the future, because the Dutch government is spending 60 million euros with the aim to offer ECEC to all toddlers in the Netherlands (Asscher, 2016; Nederlands Jeugdinstituut, 2016). Research shows that high quality ECEC can improve the social-emotional development of young children (Camilli, Vargas, Ryan, & Barnett, 2010; Gormley, Phillips, Newmark, Welti, & Adelstein, 2011). Social-emotional development includes self-regulation, communication, compliance, adaptive behavior, autonomy, affect and interactions with others (Postma, 2008). Social-emotional development is related to school-readiness, social functioning and negative developmental outcomes (Briggs-Gowan, Carter, Irwin, Wachtel, & Cicchetti, 2004; Carlton & Winsler, 1999; Parke 1994). For example, young children who have few positive interactions with others or even feel rejected, are more likely to show aggression, behavioral problems and academic failure (Pettit, Clawson, Dodge, & Bates, 1996). This shows the importance of a healthy social-emotional development and that ECEC can contribute to the social-emotional development of toddlers by creating high quality interactions.

Subsequent research has made a distinction between structural and process quality in ECEC (Boogaard & Van Daalen-Kapteijns, 2012; Cassidy et al., 2005). The current study will examine process quality. High process quality can be defined as containing the following: supportive interactions with the teacher, positive interactions with peers and possibilities for play that stimulate the cognitive development (Tayler, Ishimine, Cloney, Cleveland, & Thorpe, 2013; Vandell, 2004). Social interactions of young children are widely accepted as important predictors for their social-emotional development (Dunn, 1993).

Interactions between children and their teachers play an important role in the social-emotional development of young children (Pianta, Barnett, Burchinal, & Thornburg, 2009; Williford et al., 2013). Child-teacher interactions include emotional support, behavior guidance and superior language interactions (Pianta et al., 2010; Thomason & La Paro, 2009). High quality interactions positively affect the child's social behavior (McCartney et al., 1997). Additionally, the quality of child-teacher relations seems to predict the quality of later social peer relations (Howes, Matheson, & Hamilton, 1994; Howes, 2000). Furthermore, the interaction style of the teacher is associated with the child's engagement behavior (Raspa,

McWilliam, & Ridley, 2010). According to Phillip and Lowenstein (2010), the quality of child-teacher interactions explains the largest part of variation in child outcomes, which suggests that the influence of child-teacher interaction quality is notable. Furthermore, research shows that girls have a preference for playing near adults (Martin & Fabes, 2001) and that girls spend more time interacting with their teachers (Colwell & Lindsey, 2002). This would suggest that the effects of child-teacher interactions are higher for girls, than they are for boys.

Peer interactions are defined as social exchanges between children that create opportunities for the development of social skills based on reciprocity (Hartup, 1983; Rubin, Bukowski, & Parker, 1998). Interactions with peers are valuable experiences for the social-emotional development of children, because it teaches them how to be empathic, assertive and it strengthens their self-confidence (Tavecchio, 2008). Positive interactions with peers provide a sense of belonging and security, which stimulates the social development (Rubin et al., 1998).

Interactions during peer play can also influence the engagement in learning activities (Coolahan, Mendez, Fantuzzo, & McDermott, 2000). Children who are more disconnected from peers during peer play are more passive and non-engaged during learning activities. Research shows that children who often misbehave, seem to have more problems with regulating their anger or frustration (Eisenberg et al., 2001). Active and impulsive children who find it hard to concentrate on tasks often experience difficulties in their self-regulation (Prins & van der Oord, 2014). Additionally, there seems to be a positive reciprocal relation between self-esteem and the way in which children do their tasks (O'Mara, Marsh, Craven, & Debus, 2006).

The discussed literature shows that interactions play an important role in the social-emotional development of toddlers (Howes, 2000; Howes et al., 1994; McCartney et al., 1997;O'Mara et al., 2006; Pianta et al., 2009; Raspa et al., 2010). Research has shown that children might be affected differently by group quality (Vitiello, Moas, Hendersom, Greenfield, & Munis, 2012). Despite this knowledge, most research has examined the quality of interactions on a group level. Therefore, it is desirable to know how children's individual interactions influence their social-emotional development. To examine the quality of these interactions, the Individualized Classroom Assessment Scoring System will be used

([inCLASS] Slot, Bleses, & Downer, 2015). This observational instrument aims to capture children's interactions with teachers, peers and tasks.

Due to the fact that the inCLASS was recently developed and research has questioned the three-factor structure and found evidence for a more suitable four-factor structure (Booren et al., 2012; Downer, Booren, Lima, Luckner, & Pianta, 2010; Slot & Bleses, 2017), the first aim of this study is to explore the data by examining the current structure of the inCLASS. The second aim of the current study is to expand knowledge regarding the quality of children's individual interactions in ECEC and the influence of these interactions on their social-emotional development. Therefore, two research questions are composed: firstly, what is the best underlying factor structure of the inCLASS in the current study? Secondly, to what extent does the quality of individual interactions contribute to the social emotional development of toddlers and does gender have a moderating role in this? Considering previous research, an underlying four-factor structure for the inCLASS is expected to be found. Furthermore, the following is expected: the higher the quality of individual children's interactions with teachers, peers and tasks, the more favorable the social-emotional development of toddlers. Gender is expected to contribute significantly as moderator in these relationships.

Method

Participants

The present study used data from the CARE project, a large European research project which collects information about important topics concerning ECEC (Slot, 2016). For this study, only the Dutch data is used. 10 different organizations in the Netherlands were selected for the CARE project, 28 classrooms participated. The sample that is used in the current study to explore the data of the inCLASS consists of 120 Dutch children. For the second research question a more selective sample of 68 Dutch children between 20 and 40 months old was used. For those children, information about their social-emotional development and quality of interactions was available. A description of the general data from the participants is given in Table 1.

Procedure

The sample represents variation in the socio-economic background of the participants and covered regional variation of urban and less-urban areas across the Netherlands. Eleven preschool and daycare provisions were identified as good practices and

Table 1

Descriptive Statistics of the Sample (n=68)

Variable	% in sample			
Gender				
Boys	48.5% (*n*=33)			
Girls	51.5% (*n*=35)			
Type of provision				
Preschool	50.0% (*n*=34)			
Daycare	50.0% (*n*=34)			
		M(SD)	Min.	Max.	Range
Age in months		32.96(4.14)	20.00	40.00	20.00
Group size					
Children		8.16(2.67)	4.00	15.00	11.00
Adults		1.60(0.56)	1.00	4.00	3.00

Note. n = amount of children belonging to this percentage; M = mean; SD = Standard Deviation.

selected by Utrecht University. Ten of these provisions agreed to participate in the Dutch extension of the CARE study. Within each preschool and daycare center, one to three classrooms were selected. During two morning visits, video recordings were made of four common activities: free play, an educative activity, a creative activity and meal time. The videos last approximately 15 to 20 minutes. Six months after the video recording, a selection was made for children who were eligible for the data collection. When the child was present in at least three out of four activities and was between 18 and 36 months old during the time of recording, the child was selected. 123 children met the criteria and were selected and coded with the inCLASS. Parents were informed with a letter and gave active consent for participation in the CARE study and later as well for the caregiver to fill in the questionnaire about the social-emotional development of their children. Due to different reasons, such as going to school, moving or no permission from parents, the final sample consists of 68 children from whom additional data about their social-emotional development could be obtained. The observers participated in a two-day training and they had to pass a reliability test, for which they had to meet the criteria of 80% conformity.

Instruments

Individual children's interactions. To measure the process quality of individual interactions, the inCLASS was used. The inCLASS is an observational instrument that examines children's individual competence in preschool classroom interactions with adults, peers, and tasks or learning activities. The reliability and validity of the inCLASS are promising (Downer et al., 2010). The inCLASS contains the following three domains: Teacher Interactions, Peer Interactions and Task Orientation. Within these domains, several dimensions are distinguished. Teacher Interactions (α=.67) contains the domains Positive Engagement, Teacher Communication and Teacher Conflict. Peer Interactions (α=.59) contains the dimensions Sociability, Peer Communication, Peer Assertiveness and Peer Conflict. Finally, Task Orientation (α=.54) contains the dimensions Engagement within Tasks, Self-Reliance and Behavior Control. Each dimension is rated on a 7-point scale, ranging from 1 or 2 (low), to 3,4 or 5 (medium), to 6 or 7 (high). In the current study the scale Total Interactions, consisting of all ten dimensions, shows sufficient reliability (α=.77) (Pallant, 2005). However, the scales for the types of interactions show low reliability (Field, 2013).

To determine the inter-rater reliability of the inCLASS, an independent coder double-coded 8.6% of the videos and the intra-class correlation (ICC) of the scores per dimension of both coders was calculated. A two-way mixed model with absolute agreement for single measures was used. Overall, results show that the inter-rater reliability ranged between low too high. The ICC for the dimensions are as follows: Teacher positive engagement, between 0.37 and 0.85, Teacher communication between 0.41 and 0.78, Teacher conflict was 1.00 for one coder, but for the other two coders the inter-rater reliability was low. Peer sociability ranged between .38 and 0.62, Peer communication between 0.33 and 0.76, Peer assertiveness between 0.65 and 0.71 and Peer Conflict between 0.00 and 0.14. For the dimension Task engagement, ICC ranged between 0.36 and 0.55, Task self-reliance between 0.08 and 0.55 and Task behavior control between 0.16 and 0.43. One coder showed insufficient reliability on the dimensions Peer sociability, Peer assertiveness, task engagement, Task self-reliance and Task behavior control.

Social-emotional development. The social-emotional development is measured with the SEAM. The SEAM is developed to help prevent and identify social-emotional difficulties and behavior disorders in the first years of life. The teachers filled out the SEAM, a

questionnaire that contains 10 different scales, such as 'child expresses a range of emotions', 'child displays a positive self-image' and 'child shows empathy for others'. Every scale contains multiple statements, for example 'child shares and takes turns with other children' or 'child greets adults and peers'. These statements can be scored on a 4-point scale, where 1 is very true, 2 is somewhat true, 3 is rarely true and 4 is not true. Additionally, early childhood educators can indicate whether a statement is a concern or a focus area. Research shows robust results regarding the reliability and validity of the SEAM, but further research is needed (Squires et al., 2014). The variable of the SEAM, consisting of 35 items, shows excellent reliability with $\alpha = .91$ in the current study.

Data-analysis

All the data that is collected, is processed in IBM SPSS Statistics 24. Firstly, the data were controlled for missing values. When a scale had less than 5% missing values, these values were supplemented with the average score of the participant. Secondly, the inter-rater reliability between the coders was calculated for all dimensions. Thirdly, the conflict scales of the inCLASS and the SEAM scores were recoded. Then, new variables for the three different types of interactions (teacher-, peer- and task interactions) and one for all interactions together were created with the items of the inCLASS. A mean score of the four common activities was calculated for each participant. The mean scores on the dimensions were taken together to calculate the mean scores of the domains for each participant. To gain insight in the consistency between the variables, a Pearson correlation analysis was used. To explore the structure of the inCLASS and to prevent the loss of variation, the correlation analysis was executed with the dimensions instead of the domains. For the variable Social-emotional development, 35 items of the SEAM were taken together and a mean score for each participant was calculated.

A factor analysis was used to examine the factor structure of the inCLASS. For this part of the study the whole dataset was used (n =120). The data met the criteria for independence and linearity. The variables Peer conflict and Teacher conflict did not match the assumption of normality, which was not unexpected, while the conflict scales show little variance. Also, multicollinearity was found between the majority of the variables but was not problematic for the factor analysis. The suggested sample size of at least 100 participants was used. Based on the results of de factor analysis, new variables will be created. The dimensions will be classified in the most suitable domains. Next, a correlation analysis will be executed

with the new domains of the inCLASS, social-emotional development and gender. Because gender is a nominal variable, Spearman's correlation was chosen. Then, the assumptions for multiple regression were verified. The sample size is reasonable (n = 68) and the variables met the criteria for the assumption considering multicollinearity and singularity. The final assumptions were controlled while executing the multiple regression. The multiple regression analyses with pairwise deletion were executed with the five independent variables: one for the quality of all interactions and four for the different types of interactions according to the factor analysis. Additionally, gender was taken into account as moderator in the regression analysis. To reduce the multicollinearity between the independent variables, the independent variables were centered before creating the new variable gender x type of interactions. To measure the effect-size, explained variance will be used (R^2). The following critical values will be used: .01 is a small effect, .09 is a medium effect and .25 is a large effect (Cohen, 1988). In addition, two t tests will be executed to examine the differences in quality of interactions and social-emotional development for boys and girls .

Results

Descriptive statistics

Overall, the highest quality is found in the interactions with task or learning activities. The lowest quality is found in peer interactions, specifically for the dimensions Assertiveness and Communication. Furthermore, the Pearson correlation analysis shows modest and large positive correlations between the different domains of the inCLASS. The descriptive information is presented in Table 2.

Factor structure of the inCLASS

To answer the first research question, the data were subjected to a Principal Axis Factor (PAF) analysis with Direct Oblimin Rotation with Kaiser Normalization, based on eigenvalues. PAF was used, because this model corrects for unreliability. Due to the fact that the inCLASS dimensions correlate with each other, Direct Oblimin Rotation was used. Before the analysis was conducted KMO and Barlett's Test were calculated to gain information about the factorability of the data. The KMO showed a value of 0.78, which is acceptable for a factor analysis. Barlett's test showed significance with .00. The factor analysis resulted in two-factors. One factor consisted of the dimensions Teacher Conflict, Peer Conflict and Task Behavior Control, which explained 22.94% of the variance. The other factor consisted of the other seven dimensions and explained 42.66% of the variance.

Table 2

Pearson Correlation Analysis on Dimension Level of inCLASS (n=120)

	1	2	3	4	5	6	7	8	9	*M(SD)*	Min.	Max.
1. T. Positive engagement										3.84(0.94)	2.00	6.00
2. T. Communication	.79**									3.34(1.05)	1.33	6.00
3. T. Conflict	.16	.08								6.90(0.23)	6.00	7.00
4. P. Sociability	.61**	.59**	.08							3.67(0.84)	1.00	6.00
5. P. Communication	.42**	.46*	.01	.77**						2.59(0.95)	1.00	5.00
6. P. Assertiveness	.36**	.49**	-.18	.63**	.80**					2.12(0.90)	1.00	5.00
7. P. Conflict	.01	.00	.42**	-.07	-.29**	-.49**				6.76(0.43)	4.00	7.00
8. Task engagement	.55**	.58**	.16	.47**	.32**	.31**	.03			4.87(0.79)	3.33	7.00
9. Task self-reliance	.52**	.58**	.04	.45**	.40**	.42**	-.15	.67**		3.75(0.98)	1.00	5.50
10. Task behavior control	.24	.06	.51**	.05	-.13	-.34**	.44**	.17	.03	5.48(0.87)	3.00	7.00

Note. T = Teacher; P = Peer. * $p < .05$. ** $p < .01$ (2-tailed).

Another principal axis factor analysis was executed, this time the analysis was not based on eigenvalues, but four-factors were requested. Recent studies have shown evidence for a four-factor structure (Booren et al., 2012; Downer et al., 2010; Slot & Bleses, 2017). The outcomes of the second factor analysis are displayed in Table 3. Only factor-loadings greater than .40 are displayed. Due to the higher scale reliability in this model, the four new variables will be used for the current study.

Table 3

Factor Analysis of the inCLASS Dimensions (n=120)

Items	Teacher Interactions (α=.88)	Conflict Interactions (α=.40)	Peer Interactions (α=.89)	Task Interactions (α=.79)
Teacher Positive engagement	.791			
Teacher Communication	.762			
Teacher Conflict		.725		
Peer Sociability			.672	
Peer Communication			.985	
Peer Assertiveness			.691	
Peer Conflict		.603		
Task engagement				.689
Task self-reliance				.912
Task behavior control		.677		
Eigenvalue				
% of variance	42.66	22.94	9.66	6.50
Cumulative %	42.66	65.60	75.26	81.76

Note. α = scale reliability.

Two *t* tests were executed to examine differences for boys and girls. Results show that boys have more communication with the teacher (*M*=3.42, *SD* =1.14), than girls (*M*=3.26, *SD*=0.92), $t(115) = -.786$, $p < .05$. Also, boys appeared to be more assertive with peers (*M*=2.14, *SD* =1.04) than girls (*M*=2.12 *SD* =0.72), $t(115) = -.105$, $p < .01$. No significant differences were found in the social-emotional development of boys and girls.

Influence of quality of children's interactions

Table 4 shows the results of the correlation analysis and descriptive statistics of the domains of the inCLASS. Children who have high quality interactions with their teacher, have more high quality interactions with peers and tasks. Children who have higher quality interactions in general or high quality interactions with the teacher, have a better social-

emotional development. Despite the fact that gender does not show a significant correlation, gender was taken into account as moderator because the literature highlights the role of gender in interactions. In this way, two models are examined. First, a model without a moderating variable and second, a model with gender as the moderating variable. Results of the regression analysis of both models are displayed in Table 5.

Table 4

Spearman Correlation Analysis of inCLASS Domains, Social-emotional Development and Gender (n=68)

	1.	2.	3.	4.	5.	6.	*M(SD)*	Min	Max
1. Total interactions							4.34(.53)	3.20	5.75
2. TI	.83**						3.59(.94)	1.67	5.75
3. PI	.76**	.51**					2.87(.82)	1.00	5.00
4. TO	.75**	.58**	.36**				4.33(.78)	2.50	6.00
5. Conflict	.22**	.10	-.06*	.09			6.35(.42)	4.33	7.00
6. Social-emo.	.28*	.28*	.08	.15	.24		3.68(.30)	2.74	4.00
7. Child's gender	-.04	-.13	-.04	.14	-.10	-.13	0.51(.50)	0.00	1.00

Note. TI = Teacher Interactions; PI = Peer Interactions; TO = Task Orientation; Social-emo = Social-emotional development measured with the SEAM. * $p < .05$ and ** $p < .01$

Table 5 shows the results of the influence of the total interactions and gender on the social-emotional development. The first model explains 12% of the variance of the social-emotional development, $R^2 = .12$, $F(0.082) = 4.153$, $p = .020$. A significant main effect was found for the quality of interactions in total, $\beta = .31$, $p = .011$. In model 2, the moderator was added and accounted for an additional 6.6% of the variance in the social-emotional development, $R^2 = .181$, $\Delta R^2 = .066$, $F(0.077) = 4.634$, $p = .028$. A significant effect was found for gender as moderator, $\beta = .31$, $p = .028$. Table 6 shows the results for the interactions with the teacher. Model 1 explained 13% of the variance of the social-emotional development, $R^2 = .130$, $F(0.080) = 4.771$, $p = .012$. A significant main effect was found for the influence of teacher interactions, $\beta = .34$, $p = .006$. In de second model, the moderator was taken into account and explained an additional 5.5% of the variance of social-emotional development, $R^2 = .185$, $\Delta R^2 = .055$, $F(0.076) = 4{,}765$, $p = .043$. Again, a significant main effect was found for the moderator, $\beta = .30$, $p = .039$. As shown in Table 7, the second model in the relation with peer interactions and social-emotional development is close to being statistically significant, $p = .052$. No significant effects were found for task- and conflict interactions.

Because gender showed a significant moderating role, the interaction effects are displayed in Figure 1 and 2. Both figures show that girls have lower scores on social-emotional development when the quality of interactions is low, and they have higher scores on social-emotional development when the quality of interactions is high. Figure 1 and 2 also show that boys score higher on social-emotional development when the quality of interactions is low, and slightly lower than girls, when the quality of interactions is high.

Table 5

Results Multiple Regression Analysis: Total Interactions as Predictor of Social-emotional Development (n=68)

	B	R^2	SE	β	*p*
Model 1		.12*			
Total inCLASS	.18		.07	.31	.01*
Gender	-.07		.07	-.12	.33
Model 2		.18*			
Total inCLASS x Gender	.17		.07	.31	.03*

Note. * $p < .05$. $\Delta R^2 = .07$*.

Table 6

Results Multiple Regression Analysis: Teacher Interactions as Predictor of Social-emotional Development (n=68)

	B	R^2	SE	β	*p*
Model 1		.13*			
Teacher Interactions	.11		.04	.34	.01**
Gender	-.06		.07	-.09	.44
Model 2		.19*			
TI x Gender	.15		.07	.30	.04*

Note. TI = Teacher Interactions. * $p < .05$. ** $p < .01$ $\Delta R^2 = .06$*.

Table 7

Results Multiple Regression Analysis: Peer Interactions as Predictor of Social-emotional Development (n=68)

	B	R^2	SE	β	*p*
Model 1		.05			
Peer Interactions	.08		.06	.16	.21
Gender	-.08		.07	-.14	.26
Model 2		.10			
PI x Gender	.14		.07	.31	.05

Note. PI = Peer Interactions. $\Delta R^2 = .06$.

Table 8

Results Multiple Regression Analysis: Task Interactions as Predictor of Social-emotional Development (n=68)

	B	R^2	SE	β	*p*
Model 1		.04			
Task Interactions	-.06		.05	-.15	.23
Gender	-.10		.07	-.16	.20
Model 2		.05			
Task Interact. x Gender	-.03		.08	-.06	.70

Note. $\Delta R^2 = .00$.

Table 9

Results Multiple Regression Analysis: Conflict Interactions as Predictor of Social-emotional Development (n=68)

	B	R^2	SE	β	*p*
Model 1		.06			
Conflict Interactions	.15		.09	.21	.10
Gender	-.07		.07	-.11	.36
Model 2		.06			
CI x Gender	-.00		.07	-.00	.98

Note. $\Delta R^2 = .00$. CI = Conflict Interactions.

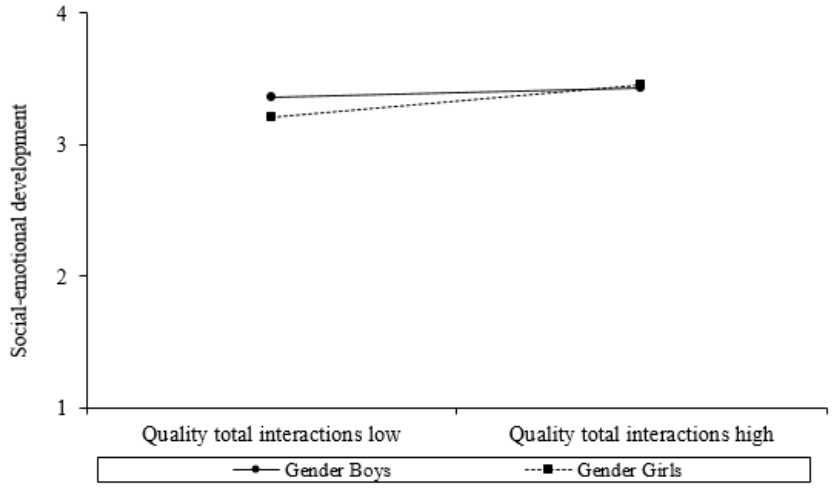

Figure 1. Moderating Role of Gender for Total Interactions and Social-emotional Development.

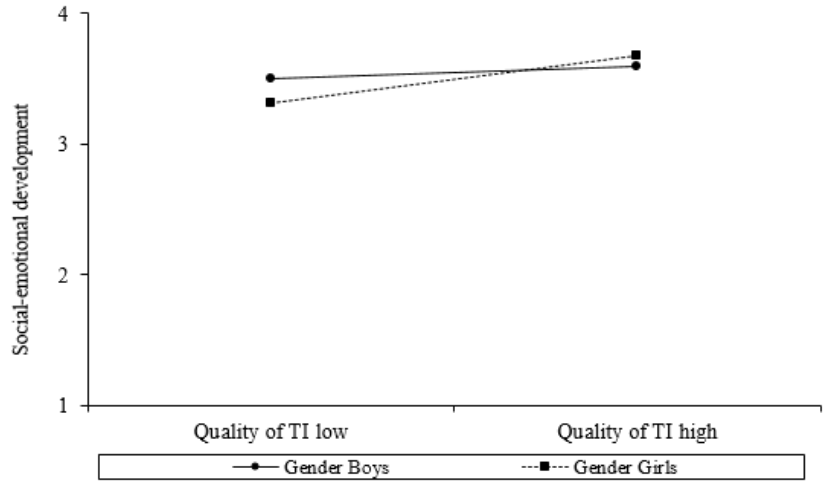

Figure 2. Moderating Role of Gender for Teacher Interactions and Social-emotional Development.

Discussion and conclusion

The current study investigated the influence of the quality of children's individual interactions at preschools and daycare centers on their social-emotional development. The quality of different types of interactions was examined. In addition, the current study examined the underlying factor structure of the inCLASS.

Firstly, the factor analysis in the current study resulted in two underlying factors. This is contradictory with the expectation and with results from most studies that found four factors (Booren et al., 2012; Downer et al., 2010; Slot & Bleses, 2017). Therefore, the analysis had to be adjusted to fixed factors before the same factor structure as in previous studies was found. The new four-factor structure of the inCLASS ensured higher scale-

reliability for three of the four domains, but the conflict domain did not reach sufficient reliability. This might be explained by the restricted variance in the conflict dimensions. This is in accordance with results from other research (Slot & Bleses, 2017). The fact that no evidence for a four-factor structure was found in the first place, can be seen as a limitation of the current study. This might be explained by the fact that an exploratory factor analysis was used, instead of a confirmatory factor analysis. A confirmatory factor analysis is not an option in IBM SPSS Statistics, which was used for the current study. The use of CFA is recommended for future research, because this analysis is often used when there is a certain expectation (Matsunaga, 2010). Furthermore, the correlation analysis of the inCLASS dimensions showed positive correlations between several dimensions which did not represent the same domain. It was expected that correlations between dimensions within the same domain would be found, but not between dimensions from other domains. However, previous studies also found correlation effects between the dimensions from other domains (Slot & Bleses, 2017).

Secondly, in line with the expectation, the current study found that high quality interactions predict a better social-emotional development. However, his significant influence was only found for all interactions together and for interactions with the teacher. Despite the fact that peer-, task- and conflict interactions did not show a significant influence, it is in accordance with the literature that interactions with the teacher are one of the most striking predictors in explaining variance in children's outcomes (Downer et al., 2010; Phillip & Lowenstein, 2010). Results showed that boys have more communication with the teacher and are more assertive with peers. It was expected that girls would have more engagement and communication with the teacher, because research showed that girls have a preference to play near adults and spend more time interacting with their teachers than boys (Martin & Fabes, 2001; Colwell & Lindsey, 2002). Despite the fact that no evidence was found for more interactions between girls and their teachers, gender showed to be a significant moderator in the relation between quality of interactions and social-emotional development. The influence of the level of quality of interactions was more striking for girls than for boys. It was expected to find more differences among boys and girls for the types of interactions and social-emotional development, but no significant differences were found. A possible explanation might be the relatively small sample size of the current study which ensures little variation in the different domains of the inCLASS. A larger sample size might ensure more variation in the other subscales, which might contribute to other results.

Furthermore, based on existing literature it was expected that more significant influences of the types of interactions on the social-emotional development would be found (Camilli et al., 2010; Gormley et al., 2011). A possible explanation for the absence of these effects for peer-, task- and conflict interactions, might be the fact that most research was conducted in the United Stated of America, where toddlers attend day care approximately 33 hours a week (Ruzek, Burchinal, Farkas, & Duncan, 2014). In the Netherlands, children of up to four years old spend approximately 14.5 hours a week in daycare centers (Portegijs, Cloïn, Ooms, & Eggink, 2006). The effects of positive interactions might be greater for children who spend more time in daycare. The children who participated in the current study derived from two different types of provisions: preschools and daycare centers. However, preschools in the Netherlands are only part of the day open, while daycare centers are open all day (Gevers Deynoot-Schaub, Helmerhorst, Bollen, & Fukking, 2014). It would be interesting for future research to examine if the amount of time that children spent in ECEC is determining the influence of the interactions. Another suggestion for future research is to differentiate the benchmarks of the SEAM. A consideration of the current study was to examine the influences of the quality of interactions on these different benchmarks. However, due to slight variation in the subscales of the SEAM it was decided not to differentiate the benchmarks. Another limitation and possible explanation for the restricted variation might be the fact that the SEAM Toddler version consists of statements about competencies matching with the age of 18 to 36 months old, while the children in the current study were selected six months before the SEAM was actually filled out. This means that a part of the children was older than 36 months old during the data collection of their social-emotional development.

Another limitation of the current study are the low and varied inter-rater reliability scores on the scales of the inCLASS. The inter-rater reliability does not match with the inter-rater reliability of other studies that used the inCLASS (Downer et al., 2010; Slot & Bleses, 2017). One of the coders did not reach sufficient reliability while coding the videos, which could mean low quality data and thus less reliable results in the current study. However, a decision was made to use all data, to prevent a reduction of the sample. But results of the current study should be interpreted with caution.

Despite its limitations, the current study has shown the presence of a more suitable underlying four-factor structure of the inCLASS and evidence was found for the importance of high quality interactions in ECEC. The current study contributes to the knowledge regarding the influence of individual interactions on the social-emotional development of toddlers. It is desirable that future research distinguishes the benchmarks of the SEAM to gain

better insight in what competencies are influenced by children's individual interactions. Most research has focused on interactions on group level instead of individual interactions. Therefore, it is of uppermost importance that future research focuses more on the individual experiences of interactions instead of group interactions, because the quality of group interactions can influence children differently (Vitiello et al., 2012).

References

Asscher, L. F. (2014). *Voortgang overleg met VNG over harmonisatie kinderopvang en peuterspeelzalen.* Ministerie van Sociale Zaken en Werkgelegenheid. Retrieved from https://vng.nl/files/vng/publicaties/2015/kamerbrief-voortgang-overleg-harmonisatie-kinderopvang-en-peuterspeelzalen.pdf

Asscher, L. F. (2016). *Betere kwaliteit, betere toegankelijkheid in de kinderopvang.* Ministerie van Sociale Zaken en Werkgelegenheid. Retrieved from https://www.rijksoverheid.nl/binaries/rijksoverheid/documenten/kamerstukken/2016/05/27/kamerbrief-betere-kwaliteit-betere-toegankelijkheid-in-de-kinderopvang/kamerbrief-betere-kwaliteit-betere-toegankelijkheid-in-de-kinderopvang.pdf

Boogaard, M., & Daalen-Kapteijns, M., Van. (2012). *Pedagogische kwaliteit van buitenschoolse opvang in Nederland.* Amsterdam: Kohnstamm Instituut.

Booren, L. M., Downer, J. T., & Vitiello, V. E. (2012). Observations of children's interactions with teachers, peers, and tasks across preschool classroom activity settings. *Early Education & Development, 23,* 517-538. doi:10.1080/10409289.2010.548767

Briggs-Gowan, M. J., Carter, A. S., Irwin, J. R., Wachtel, K., & Cicchetti, V. (2004). The brief infant-toddler social and emotional assessment: Screening for social-emotional problems and delays in competence. *Journal of Pediatric Psychology, 29,* 143-155. doi:10.1093/jpepsy/jsh017

Camilli, G., Vargas, S., Ryan, S., & Barnett, W. S. (2010). Meta-analysis of the effects of early education interventions on cognitive and social development. *Teachers College Record, 112,* 579-620. Retrieved from: http://www.gregorycamilli.info /papers/ early%20education% 20interventions.pdf

Carlton, M. P., & Winsler, A. (1999). School readiness: The need for a paradigm shift. *School Psychology Review, 28,* 338-352. Retrieved from http://web.b.ebscohost.com/ehost /pdfviewer/pdfviewer?vid=1&sid=890364ee-58dd-41de-97c8-6c5fefc20486% 40sessionmgr120

Cassidy, D. J., Hestenes, L. L., Hansen, J. K., Hegde, A., Shim, J., & Hestenes, S. (2005). Revisiting the two faces of child care quality: Structure and process. *Early Education and Development, 16,* 505-520. doi:10.1207/s15566935eed1604_10

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* New Jersey, United States: Lawrence Eribaum.

Colwell, M. J., & Lindsey, E. W. (2002). Teacher-child interactions and preschool children's perceptions of self and peers. *Early Child Development and Care, 173,* 2-3. doi:10

.1080/03004430303096

Coolahan, K., Fantuzzo, J., Mendez, J., & McDermott, P. (2000). Preschool peer interactions and readiness to learn: Relationships between classroom peer play and learning behaviors and conduct. *Journal of Educational Psychology, 92,* 458-465. doi:10.1037/0022-0663.92.3.458

Downer, J. T., Booren, L. M., Lima, O. K., Luckner, A. E., & Pianta, R. C. (2010). The Individualized Classroom Assessment Scoring System (inCLASS): Preliminary reliability and validity of a system for observing preschoolers' competence in classroom interactions. *Early Childhood Research Quarterly, 25,* 1-16. doi:10. 1016/j.ecresq.2009.08.2004

Dunn, J. (1993). *Young children's close relationships: Beyond attachment*. Sage Publications, Inc.

Eisenberg, N., Cumberland, A., Spinrad, T. L., Fabes, R. A., …, Guthrie, I. K. (2001). The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child Development, 72,* 1112-1134. doi:0009-3920/2001/7204-0011

Field, A. (2013). *Discovering statistics using SPSS*. London, England: Sage publications.

Gevers Deynoot-Schaub, M. J. J. M., Helmerhorst, K. O. W., Bollen, I., & Fukkink, R. G. (2014). *Pedagogische kwaliteit van de opvang voor 2- tot 4-jarigen in Nederlandse peuterspeelzalen in 2013*. Kohnstamm Instituuut & Universiteit van Amsterdam.

Gormley, W. T., Phillips, D. A., Newmark, K., Welti, K., & Adelstein, S. (2011). Social-emotional effects of early childhood education programs in Tulsa. *Child Development, 82,* 2095-2109. doi:10.1111/j.146 7-8624.2011.01648.x

Hartup, W. (1983) Peer relations. In Mussen, P. (1983). *Handbook of Child Psychology* (pp. 103-196). New York: Wiley.

Howes, C. (2000). Social-emotional classroom climate in child care, child-teacher relationships and children's second grade peer relations. *Social Development, 9,* 191-204. doi:10.1111/1467-9507.00119

Howes, C., Matheson, C. C., & Hamilton, C. E. (1994). Maternal, teacher and child care history correlates of children's relationships with peers. *Child Development, 65,* 264-272. doi:10.1111/j.1467-8624.1994.tb00749.x

Martin, C. L., & Fabes, R. A. (2001). The stability and consequences of young children's same-sex peer interactions. *Developmental Psychology, 37,* 431-446. doi:10.1037 /0012-1649.37.3.431

Matsugana, M. (2010). How to factor-analyze your data right. Do's, don't and how to's. *International Journal of Psychological Research, 3,* 97-110. doi:10.21500/20112084.854

McCartney, K., Scarr, S., Rocheleau, A., Phillips, D., Abbott-Shim, M., Eisenberg, M., …, & Ruh, J. (1997). Teacher-child interaction and child-care auspices as predictors of social outcomes in infants, toddlers, and preschoolers. *Merrill-Palmer Quarterly, 43,* 426-450. Retrieved from http://www.jstor.org/stable/23093332

Nederlands Jeugdsinstituut. (2016). Voor alle peuters in 2021 voorschoolse voorziening. Retrieved from http://www.nji.nl/nl/Actueel/Nieuws-over-de-jeugdsector/2016/Voor-alle-peuters-in-2021-voorschoolse-voorziening

O'Mara, A. J., Marsh, H. W., Craven, R. G., & Debus, R. L. (2010). Do self-concept interventions make a difference? A synergistic blend of construct validation and meta-analysis. *Educational Psychologist, 41,* 181-206. doi:10.1207/s15326985ep4103

Pallant, J. (2013). *SPSS survival manual*. United Kingdom: McGraw-Hill Education.

Parke, R. D. (1994). Progress, paradigms, and unresolved problems. A commentary on recent advances in our understanding of children's emotions. *Merrill-Palmer Quarterly, 40,* 157-169. Retrieved from http://www.jstor.org/stable/23087913

Pettit, G. S., Clawson, M. A., Dodge, K. A., & Bates, J. E. (1996). Stability and change in peer-rejected status: The role of child behavior, parenting and family ecology. *Merrill-Palmer Quarterly, 42,* 267-294. Retrieved from http://www.jstor.org/stable/pdf/23087880.pdf?refreqid=excelsior%3Aa67aed63898a1398fde26ad067a27336

Phillips, D. A., & Lowenstein, A. E. (2010). Early care, education and child development. *Annual Review of Psychology, 62,* 483-500. doi:10.1146/annurev.psych.031809.130707

Pianta, R. C., Barnett, W. S., Burchinal, M., & Thornburg, K. R. (2009). The effects of preschool education: What we know, how public policy is or is not aligned with the evidence base, and what we need to know. *Psychological Science in the Public Interest, 10,* 49–88. doi:10.1177/1529100610381908

Pianta, R., Howes, C., Burchinal, M., Bryant, D., Clifford, R., Early, D., & Barbarin, O. (2010). Features of pre-kindergarten programs, classrooms, and teachers: Do they predict observed classroom quality and child-teacher interactions? *Applied Developmental Science, 9,* 144-159. doi:10.1207/s1532480xads0903_2

Portegijs, W., Cloïn, M., Ooms, I., & Eggink, E. (2006). Het gebruik van kinderopvang. In Portegijs, W., Cloïn, M., Ooms, I., & Eggink, E. (2006). *Hoe het werkt met kinderen.*

Moeders over kinderopvang en werk (pp. 34-51). Den Haag: Sociaal Cultureel Planbureau.

Postma, S. (2008). JGZ-richtlijn. Vroegsignalering van psychosociale problemen. *Centrum Jeugdgezondheid.* Retrieved from http://www.pharos.nl/documents/doc/jgz-richtlijn_vroegsignalering_psychosociale_problemen-1-.pdf

Prins, P., & Oord, S. van der. (2014). Stoornissen in de aandacht en impulsregulatie. In Prins, P. & Braet, C. (2014). *Handboek klinische ontwikkelingspsychologie* (pp. 277-298). Bohn Stafleu van Loghum.

Raspa, M. J., McWilliam, R. A., & Ridley, S. M. (2010). Child care quality and children's engagement. *Early Education and Development, 12,* 209-224. doi:10.1207 /s15566935eed1202_3

Rubin, K. H., Bukowski, W., & Parker, J. (1998). Peer interactions, relationships and groups. In Eisenberg, N., Damon, W., & Lerner, R. (Eds.) *Handbook of child psychology: Vol. 3. Social, emotional and personality development* (pp. 371-643). Hoboken, NJ: Wiley.

Ruzek, E., Burchinal, M., Farkas, G., & Duncan, G. J. (2014). The quality of toddler child care and cognitive skills at 24 months: Propensity score analysis results from the ECLS-B. *Early Childhood Research Quarterly, 29,* 12-21. doi:10.1016/j.ecresq .2013.09.002

Slot, P. L. (2016). Het spanningsveld spelen-leren kan opgelost worden. *Bestuur en Beleid Management en Pedagogiek in het Kindercentrum,* 38-42.

Slot, P. L., & Bleses, D. (2017). Individual children's interactions with teachers, peers, and tasks: The applicability of the inCLASS Pre-K in Danish preschools. *Manuscript under revision.*

Slot, P. L., Bleses, D., & Downer, J. (2015). *The Individualized Classroom Assessment Scoring System for Toddlers manual.* Utrecht University/University of Southern Denmark.

Squires, J., Bricker, D., Waddel, M., Funk, K., Clifford, J., & Hoselton, R. (2014). Technical Report. In Squires, J., Bricker, D., Waddel, M., Funk, K., Clifford, J., & Hoselton, R. (2014). Social-emotional assessment/evaluation measure (SEAM). Research Edition.

Tavecchio, L. (2008*). Kinderopvang als opvoedingsmilieu: Wat zijn de effecten en wat betekent het voor jongens?* In Koops, W., Levering, B, & Winter, M, de. (red). Opvoeding als Spiegel van de beschaving. Een moderne antropologie van de opvoeding (pp. 180-194). Amsterdam: SWP.

Tayler, C., Ishimine, K., Cloney, D., Cleveland, G., & Thorpe, K. (2013). The quality of early

childhood education and care services in Australia. *Australasian Journal of Early Childhood, 38,* 13-21. Retrieved from https://search.informit.com.au/documentSummary;dn=449075796308754;res=IELAPA

Thomason, A. C., & La Paro, K. M. (2009). Measuring the quality of teacher-child interactions in toddler child care. *Early Education and Development, 20,* 285-304. doi:10.1080/10409280902773351

Vandell, D. L. (2004). Early child care: The known and the unknown. *Merrill-Palmer Quarterly, 50,* 387-414. doi:10.1353/mpq.2004.0027

Vitiello, V. E., Moas, O., Henderson, H. A., Greenfield, D. B., & Munis, P. M. (2012). Goodness of fit between children and classrooms: Effects of child temperament and preschool classroom quality on achievement trajectories. *Early Education and Development, 23,* 302-322. doi:10.1080/10409289.2011.526415

Williford, A. P., Whittaker, J. E. V., Vitiello, V. E., & Downer, J. T. (2013). Children's engagement within the preschool classroom and their development of self-regulation. *Early Education and Development, 24,* 162-187. doi:10.1080/10409289.2011.628270