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The teacher's role in supporting young children's level of play engagement

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This paper discusses the results of a study of the relationships between teacher behaviour and the level of play engagement in two- and three-year-old children in Dutch childcare centres. We found that the continuous proximity of the teacher had the greatest impact on the level of play engagement, while the teacher's walking around and only brief contacts with the children had a negative impact. In line with earlier studies, two-sided and reciprocal interactions between teacher and children also yielded positive results for play engagement. Both our quantitative and qualitative analyses showed a strong co-variation of variables. When the teacher paid only brief visits, and peers also walked in and out, there was a greater likelihood of one-sided interactions. When the teacher was always nearby, we observed the opposite. Dutch teachers spend most of their time walking around. Their pedagogy seems to be based on a model of individual care and control and insensitiveness of group dynamic processes.

Keywords: play engagement; emotional security; proximity of teacher; reciprocal interactions; play enhancement; young children

1. Introduction

Seygen (2;8) is building a tower of blocks on top of a cart with little wheels. Next to him two other children are also building a tower. Seygen rolls his tower to the teacher who is sitting on the floor with a baby on her lap, and he says: 'look!' The teacher responds with a broad smile and says 'wow!' Seygen pushes the tower a little further and it falls over. 'Oooh, it's fallen!' he says. 'Oooh it's fallen,' the teacher repeats after him. 'What happened?' she asks. Seygen starts explaining in an unintelligible language of his own. The teacher clearly cannot comprehend his words, but she keeps on responding to his enthusiasm with laughter, short open questions, and compliments.

In this example Seygen is fully engaged in his play, and his teacher fosters his engagement by her warmth, interest, and confirming behaviour. Play has long been recognised as the royal road to learning and development in early childhood (Bjorklund, 2007; Hännikäinen, Singer, & Van Oers, 2013; Sutton-Smith, 1997). In play young children are intrinsically motivated to explore, to experiment, and to share their experiences with others, and they use all their senses and their social and cognitive capacities. But the quality of play can be varied. Laevers (2000, 2005) has pointed to the importance of the level of engagement in play. Play with a low level of engagement is stereotypically repetitious, superficial, and with many interruptions, and does not offer a rich learning

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experience. On the contrary, play with a high level of engagement offers ‘deep-level learning’. During high engagement children operate at their full capabilities. Focused attention and interest in play are important factors for both language and cognitive development (Ebbeck et al., 2012). Constructs linked to play engagement are persistence and creativity (Robson & Rowe, 2012), self-regulation, executive skills, and goal-directedness (Carlson, 2009; Leavers, 2005; van der Ven, Kroesbergen, Boom, & Leseman, 2013).

Young children have a natural tendency to engage in play, but the level of play engagement is also dependent on the social and physical environments. In this paper, we will discuss a study of the teacher’s role in two- and three-year-old children’s level of engagement in Dutch childcare centres. The reason to study play engagement was that we observed that two- and three-year-olds in Dutch childcare centres were seldom highly involved in play over a long period of time and that they had many minor conflicts (Rourou, Singer, Bekkema, & de Haan, 2006). (Name deleted to maintain the integrity of the review process). We had the impression that their level of play engagement was too low. But we could not find any normative studies on this. We do not know whether three minutes of high-level engagement is normative in two-year-olds. Or can we expect 10 minutes of high-level engagement or even longer periods of high involvement? Maybe young children also need time to relax, look, and wander around. Therefore, the first goal of our study was to describe the level of engagement during free play, and to open up the discussion: are we satisfied with the level of engagement that we observed in this study of Dutch child care centres? Our second aim was to study the teacher’s role in the level of engagement during free play. What kind of teacher behaviour relates to greater or lower levels of play engagement? How can teachers create an environment that facilitates children’s engagement in play?

2. Theoretical framework

2.1 Play engagement

In studies of play engagement, diverse definitions of engagement are used. But they have one characteristic in common: the focused attention and concentration of the playing child (Choi & Anderson, 1991; Laevers, 2000; Malmkog & McDonnell, 1999; Robson & Rowe, 2012; Ruff & Capozzoli, 2003; Ruff & Lawson, 1990). Children can be more or less engaged and focused in their play. Laevers, De Bruyckere, Silkens, and Snoeck (2005) have developed an observation method to distinguish several levels of play engagement. A child with a low level of engagement is mentally absent and does not go further in an activity with many interruptions. A child with a moderate level of engagement is doing something, but is not really concentrated. A highly engaged child shows intense mental activity and is fully concentrated. According to Laevers (2000), engagement is not linked to specific types of behaviour or to specific levels of development. Human beings, irrespective of their age, can be more or less engaged during an activity. But Ruff and Capozzoli (2003) have shown that there is also development in young children with regard to sustained attention and distractibility. In babies and toddlers attention is highly influenced by novelty of objects and events and by processes of habituation. Later on a second attention system develops slowly with increasing cognitive and self-regulatory skills. Self-generated and goal-orientated schemes and tasks become major incentives for sustained, focused attention.

In the preschool years children's engagement slowly becomes less vulnerable to distractors and external influences.

2.2 *The teacher's role in emotional security*

The level of play engagement is closely related to children's well-being and emotional security in the teacher-child relationship (Howes & Smith, 1995; Laevers, 2005). According to the attachment theory, the caregiver or teacher has to be available and sensitive to the child's support needs (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969). The sensitive teacher or caregiver alertly observes the child's signals and promptly and adequately reacts to his or her needs (Howes & Smith, 1995). The interaction between caregiver or teacher and child is two-sided; the child's signals are confirmed by the caregiver or teacher, and there is reciprocity in the interactions.

In studies based on the attachment theory, most attention is paid to the caregiver's behaviour, especially the caregiver's sensitivity to the signals of the individual child. Less attention is paid to the opportunities of the child to play an active role in seeking emotional support from the caregiver, for instance, by playing near the caregiver, by social referencing, or by crawling or walking to the caregiver (Gosselin & Forman, 2012). Young children look for physical contact to refuel at an emotional level (Mahler, Pine, & Bergman, 1975). To be successful in this respect the child needs a caregiver who is physically available. Physical proximity is a source of trust, and separation from the primary caregiver causes a high level of stress in early childhood (Ainsworth et al., 1978). Without physical availability the child is out of control. Physical availability of the caregiver or teacher is especially important in group settings because of the social complexity of the situation; children and caregivers walking around. Ahnert, Pinquart, and Lamb (2006) found in a meta-analysis of studies of young children's attachment to care providers that the provider's sensitivity to individual children did not predict the attachment security of these children. However, group-focused sensitivity did predict the attachment security. Group-focused sensitivity was defined by the caregiver's attentiveness to the group and the amounts of time they spent in positive proximate interactions with children while supervising the entire group.

2.3 *The teacher's role in play*

Play engagement is also influenced by the way teachers facilitate play behaviour in young children. During free play the teacher has two kinds of roles: the role of play manager and the role of play enhancer or playmate (Kontos, 1999; Kontos, Burchinal, Howes, Wisseh, & Galinsky, 2002). In her role of play manager, the teacher sets the stage by organising the physical and social environments. She creates a rich play environment and rearranges the classroom in appealing corners or areas (Edwards, Gandini, & Forman, 1993; Laevers, 2005; Moore, 1986). There are sufficient play objects and room to move around without disturbing other children. With regard to the organisation of the social environment, earlier studies have shown that young children are more engaged when they play in small groups than in larger groups (Musatti & Mayer, 2011; Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2004). Two-year-olds tend to play near the teachers, while three-year-olds progressively distance themselves from the teachers (Rossetti-Ferreira, Oliveira, Campos-de-Carvalho, & Amorim, 2011). It is important that the teacher's structure of the environment offers

children the possibility to control the physical distance from the teacher: to be nearby in case they need proximity or physical contact or to distance themselves when they want to play with peers without teacher involvement.

As play manager the teacher not only structures the children's environment, but he or she also actively regulates the children's behaviour by giving them directives, suggestions, and explanations why behaviour is or is not appropriate. The caregiver or teacher observes the children and helps them find activities that meet their interest (Laevers, 2000). Positive suggestions and warm involvement with the child are more effective than harshness and negative forms of behaviour regulation on the child's play behaviour and the caregiver-child relationship (Howes, Hamilton, & Philipsen, 1998; Howes, Rodning, Galluzzo, & Myers, 1988; Webster-Stratton & Reid, 2004).

In her role as play enhancer or playmate, the teacher is directly involved in the children's play (Robson & Rowe, 2012). In free play, teachers can offer the possibility to enter into a structured or teacher-initiated activity such as drawing, painting, or crafting in a small group; or she can enter into a child-initiated activity. Earlier studies show that child-initiated activities featured the highest levels of play engagement; they were associated with more experimentation, flexibility, and persistence (Emilson & Folkeson, 2006; Robson & Rowe, 2012; Trawick-Smith, & Dziurgot, 2011). Strong framing by the teacher risks restricting children's participation in the activity. As playmate, the teacher can sustain children's engagement by sharing attention and confirming children's bits of attention (Musatti & Mayer, 2011; Tomasello, Carpenter, Call, Behne, & Moll, 2005). The teacher can also enhance play engagement by pointing at novel experiences and engaging in responsive and reciprocal conversations (Durden & Dangel, 2008; Musatti & Mayer, 2011; Rimm-Kaufman, Voorhees, Snell, & La Paro, 2003). But direct involvement of teachers in young children's play can have a negative impact on children's play engagement (Harper & McClusky, 2003; Kontos & Wilcox-Herzog, 1997). Therefore, teachers are found to disturb children's engagement with objects and peers by being too directive without responding to children or by being intrusive and taking over children's initiatives (Harper & McCluskey, 2003; McWilliam, Scarborough, & Kim, 2003; Wilcox-Herzog & Kontos, 1998). Teachers have to look for appropriateness of fit between their responses and the level of support that children need (Trawick-Smith & Dziurgot, 2011).

In short, we expect to find in our study that young children's level of play engagement behaviour is related to: (1) the caregivers' physical availability and to the occurrence of two-sided interactions between caregiver and child, instead of one-sided interactions; (2) quality of play enhancement (offering play activities and being a playmate without being intrusive); and (3) quality of play management (offering a physical and social structure that facilitates rich play in small groups; and positive regulation of behaviour).

3. Method

3.1 Participants

This study is based on the analyses of two- and three-year-old children recruited from 24 groups in licensed Dutch childcare centres. Most childcare centres were located in major urban areas – Amsterdam, Rotterdam, The Hague, and Utrecht, and some in smaller municipalities in the Netherlands. All centres had qualified teachers and a heterogeneous composition of ethnic backgrounds of children. The mean group size

during observations was 10.5 children and 2.4 teachers and trainees. In total 116 children were selected, with an average age of 34 months ($sd = 6.3$). Fifty-three of the children were girls and 63 were boys; and 52 of the children were native Dutch, 32 Moroccan, and 32 Antillean.

3.2 Procedure

Our research design followed ethical norms, and was carried out with the informed consent of the parents of the focus children as well as the parents of the other children present during data collection. The researchers visited the group before they started with audio- and videotaping to become familiar with the children. The researchers explained to the children that they wanted to learn how children played at the centre. In a few cases a child refused to wear the little backpack with the transmitter for the audio taping. When a child refused, the backpack was removed and one researcher made notes of the verbal exchanges. Data were collected by focal individual sampling. Each focus child was video- and audio-taped on two different days for 30 minutes during their free play. Free play was defined as a situation in which children were free to choose the activity they wanted to do; for teacher-initiated activities, the children were free to join in or to move out.

3.3 Instruments

For each child we selected and analysed six intervals of four minutes. In our selection we used a fixed interval method; for both tapes of 30 minutes we analysed 3–7 minutes, 13–17 minutes, and 23–27 minutes. In these four-minute intervals we analysed the level of engagement and variables with regard to teacher behaviour (see for an overview in [Tables 1](#) and [2](#)).

3.3.1 Level of play engagement

In order to assess children's play engagement, we used Laevers' Child Involvement Scale (Laevers et al., 2005). This scale has a time specification of two minutes per observation. In our study we used the last two minutes of each four-minute interval to assess the play engagement. This resulted in six assessment intervals per child. In Laevers scale, several signals of the level of children's involvement are used, such as duration and depth of concentrated attention, motivation, pride, and persistence. To increase the reliability of the coding system, we have focused on the most basic characteristics of engagement: the level of activity, the duration of focused attention, and the distractibility of the child. Poor engagement is coded if during the two-

Table 1. Coding system level of play engagement accessed during the last two minutes of the four-minute intervals ($n = 686$).

<i>Play engagement</i>	<ul style="list-style-type: none"> • <i>Poor engagement</i>: the child shows a low level of activity, is frequently distracted, or is active without being focused • <i>Moderate engagement</i>: the child is active and shows a brief moment of focused attention: at least for 1.5 minutes and less than 2 minutes • <i>Good engagement</i>: the child is active and focused for a longer period of time; more than two minutes
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Table 2. Coding system of teacher variables.

<i>Physical availability of the teacher</i>	<ul style="list-style-type: none">• <i>Near</i>: The teacher is within a distance of 2 metres of the child• <i>In/out</i>: The teacher is near the child for one or more times or the teacher interacts with the child from a distance• <i>Not near</i>: During the interval the teacher is not within 2 metres of the child
<i>Quality of interaction</i>	<ul style="list-style-type: none">• <i>Two-sided interaction</i>: Joined attention, reciprocal interactions between teacher and child• <i>One-sided interaction</i>: short caregiver initiated interaction, teacher or caregiver does not respond to the signals of the child
<i>Teacher as play enhancer:</i>	
• <i>Structured activity</i>	<ul style="list-style-type: none">• The focus child is involved in a teacher organised and initiated activity
• <i>Support in starting an activity</i>	<ul style="list-style-type: none">• The teacher supports the focus child to find or start a play activity
• <i>Playmate</i>	<ul style="list-style-type: none">• The teacher joins in the child's play as playmate
<i>Teacher as play enhancer:</i>	
• <i>Behaviour regulation</i>	<ul style="list-style-type: none">• <i>Positive regulation</i>: The teacher gives a compliment or stimulates desirable behaviour• <i>Negative regulation</i>: The teacher stops undesirable behaviour, forbids or gives warnings (in a negative way)• <i>Positive and negative regulation</i>: The teacher gives both negative and positive directives
• <i>Structure of physical environment (play objects)</i>	<ul style="list-style-type: none">• <i>Few sorts of play objects</i>: there is one kind of play object available within the reach of the child• <i>Several sorts of play objects</i>: there are several kinds of play objects available that can elicit diverse play activities• <i>Many sorts of play objects</i>: many kind of toys available within the reach of the child and a large range of play activities
• <i>Structure of social environment (peers)</i>	<ul style="list-style-type: none">• <i>Near</i>: Peers are nearby during the entire interval, within a distance of 2 metres; up to two children go in and out• <i>In/out</i>: Three or more children approach and leave (walking in and out)• <i>Not near</i>: There are no other children within a distance of 2 metres

minute observation the child shows a low level of activity, is frequently distracted, or is active without being focused. Moderate engagement is coded when the child is active and focused for 1.5–2 minutes. Good engagement is coded when the child is active and focused for longer than two minutes. We did not include Laevers' lowest level (no activity, and passive and absent) or his highest level (being totally involved without signs of distraction for a long period of time), because they did not occur in our data.

3.3.2 Teacher variables

We assessed the physical availability of the teachers by coding whether the teacher was nearby, walked in and out, or was absent during the four-minute interval of the child during free play. We coded whether the teacher interacted with the child or not when

she was nearby or walked in and out. The sensitivity and quality of the teacher's interaction with the child was assessed by coding whether the teacher entered into a one-sided or two-sided interaction. The teachers' role as play enhancer was assessed by coding whether or not the child was involved in a structured and teacher-initiated activity; whether or not the teacher helped the child to find an activity; and whether the teacher acted as the child's playmate. The teacher's role as play manager was assessed by coding whether or not the teacher regulated the focus child's behaviour during the four-minute interval. The teacher's role in structuring the physical environment was assessed by coding the amount of play objects that were available to the children. Her role in structuring the social environment was assessed by coding the distribution of the children: whether peers were nearby, walking in and out, or were absent with respect to the focus child.

3.3.3 Reliability

To calculate the inter-reliability of coders with the Cohen's coefficient K , a random sample of 18% of the video was independently coded by researchers/child psychologists. All calculations of the reliability were substantial or almost complete. The reliability for measuring play engagement was .81 (almost complete); for the proximity of the teacher .77 (substantial); for quality of interaction .79 (substantial); for play enhancement .77 (substantial); for behaviour regulation .86 (almost complete); for the physical environment .75 (substantial); and for proximity of peers .84 (almost complete).

3.4 Statistics

All variables were entered in SPSS and further analysed. The chi-square tests were used because of the categorical variables. Furthermore, an odds ratio was computed, to assess the size of the effects. Finally, a qualitative analysis was done to further explore the underlying mechanisms of the effects found.

4. Results

4.1 Quantitative analyses

4.1.1 Level of play engagement

In total 686 intervals were observed. Of these, 26.8% was assigned as good engagement, 41.3% as moderate engagement, and 31.9% as poor engagement (Table 3).

Proximity of the teacher. The percentages of teacher proximity are displayed in Figure 1. Directly notable is the small percentage of intervals (9.9%) in which the teachers were near a child for at least four minutes. In 71.4% of the intervals, the teacher was moving in and out of the child's play area. In the remaining 18.7%, the teacher was not near.

Proximity of the teacher and level of play engagement. We found a highly significant association between play engagement and teacher proximity ($\chi^2(4) = 37.80$, $p < .001$).

To calculate the amount of the effects of the independent variables on the various levels of play engagement, we broke down Table 3 to binary comparisons. In our further analysis of the size and impact of the effects of specific variables, we combined

Table 3. Frequencies and percentages of play engagement and proximity of the teacher and the target child, $N = 686$ intervals.

Proximity of the teacher	Play engagement			Total
	Poor	Moderate	Good	
Near	13 19.1%	21 30.9%	34 50.0%	68 100%
In and out	180 36.7%	206 42.0%	104 21.2%	490 100%
Not near	26 20.3%	56 43.8%	46 35.9%	128 100%
Total	219 31.9%	283 41.3%	184 26.8%	686 100.0%

poor and moderate engagement to compare with good engagement. To analyse the size and impact of the effects of proximity, we also made binary comparisons of various combinations of this variable. A positive association was found between the proximity of the teacher and play engagement ($\chi^2(1) = 6.66$, $p = .01$). When the teacher was nearby, the likelihood of reaching good engagement (measured with the odds ratio) was 3.12 times greater than when a teacher moved in/out or was not near the child. When a teacher was not near the child it had a significant effect on play engagement as well ($\chi^2(1) = 6.66$, $p = .01$). In those cases, the likelihood of reaching good engagement was 1.71 times greater than when a teacher was near or moved in/out. A negative association was found between the teacher moving in/out and play engagement ($\chi^2(1) = 27.38$, $p < .001$). When a teacher moved in/out, the likelihood of reaching good engagement became 0.39 times less than when a teacher was near or not near.

4.1.2 Quality of interaction and play engagement

The quality of the interaction had a significant association with play engagement ($\chi^2(1) = 6.45$, $p = .01$). When a teacher engaged in a two-sided interaction, the likelihood of reaching good engagement was 1.77 times greater than with a one-sided or a negative interaction.

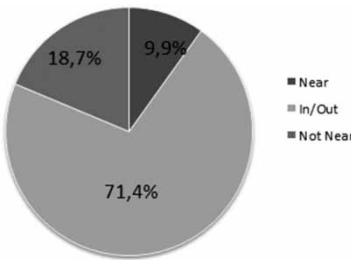


Figure 1. Proximity of the teacher during four minutes of free play.

4.1.3 Play enhancement and play engagement

The variables with regard to play enhancement are not mutually exclusive. For instance, the teacher can be a playmate and give support to start an activity in the same interval. We found that support in starting an activity had a negative effect on play engagement. Leading a structured activity in a small group and acting as a playmate did not have a significant effect on the play engagement (see Table 4).

4.1.4 Play management and play engagement

A significant and positive association was found between positive regulation of child's behaviour and play engagement ($\chi^2(1) = 4.27, p = .039$). If a teacher regulated a child's behaviour in an exclusively positive way, the likelihood of reaching good engagement was 4.33 times greater than when the teacher used a combination of positive and negative regulation. The organisation of the physical environment ($N = 685$) had a significant effect on play engagement ($\chi^2(1) = 19.18, p < .001$). In 194 intervals there were only a few sorts of play objects, in 404 intervals there were several sorts of play objects, and in 87 intervals there were many sorts of play objects. When there are only a few sorts of play objects, the likelihood of reaching a good engagement was 2.21 times greater than when there were several or many sorts of play objects in the child's surroundings. The organisation of the social environment ($N = 693$) had a significant effect on the play engagement ($\chi^2(1) = 25.12, p < .001$). In 73 intervals the other children were nearby, in 487 intervals the other children moved in and out, and in 5 intervals there were no children in the direct surroundings of the focus child. When other children were nearby, the likelihood of a good engagement (analysed with odds ratio) was 2.47 greater than when the other children moved in and out or were absent.

Table 4. Overview results.

		<i>N</i>	χ^2	<i>p</i>	Odds ratio
Proximity of teacher		686	37.80	.001	
	Near (vs. in/out and not near)	68	6.66	.01	3.12
	Not near (vs. in/out and near)	26	6.66	.01	1.71
	In/out (vs. near and not near)	180	27.38	.001	-0.39
Quality of interaction	Two-sided interaction	220	6.45	.01	1.77
	(vs. one-side interaction/negative interaction)				
Teacher as play enhancer:	Structured activity in a small group	87	.23	.631	1.13
		68	8.62	.003	-0.34
	Support in starting an activity	206	.31	.576	1.11
	Playmate				
Teacher as play manager: Behaviour regulation	Positive regulation	116	4.27	.039	4.33
	(vs. negative regulation and positive/negative regulation in one interval)				
Structure of physical environment	Few sorts of play objects	194	19.18	.00	2.21
	Several sorts of play objects	404	4.81	.028	-0.68
	Many sorts of play objects	87	7.21	.007	-0.44
Structure of social environment (peers)	Nearby	73	25.12	.00	2.47
	In and out	487	26.00	.00	-0.40
	No children	5	0.43	.51	1.82

4.1.5 Age, gender, ethnicity, and co-varying variables, and play engagement

Age appears to be associated with play engagement. Three-year-olds display a significantly higher level of play engagement than two-year-olds ($\chi^2(1) = 4.74, p = .03$). Furthermore, children playing with peers have a significantly greater play engagement than children playing alone ($\chi^2(1) = 9.65, p = .002$). Finally, no significant associations were found for sex, ethnicity, or type of group (horizontal or vertical) in play engagement. The proximity of the teacher has a significant effect on the proximity of other children ($\chi^2(1) = 71.84, p < .001$). When the teacher is nearby the likelihood that other children are nearby is 8.47 times greater. The proximity of the teacher has a significant effect on the organisation of the physical environment ($\chi^2(1) = 28.25, p < .001$). When the teacher is close, the likelihood of only a few sorts of play material being present is 3.74 times greater.

4.1.6 Summary of the quantitative analyses

We found that the physical availability, and especially the continuous proximity of the teacher during the four-minute observation period, were significantly associated with higher levels of play engagement. When the teacher was close, the likelihood of reaching good engagement was 3.12 times greater than when a teacher moved in/out or was not near the child. Going in and out was negatively associated with higher levels of play engagement. We also found significant associations between play engagement and the structure of physical environment (play objects) and social environment (peers) and the teacher's regulation of behaviour. When there are only a few sorts of play objects and peers are continuously nearby during the four-minute interval, the likelihood of reaching a good level of engagement was greater. We also found significant associations between quality of interaction and play engagement. Two-sided interactions between teacher and child were significantly more positive and associated with higher levels of play engagement compared with one-sided interactions of the teacher. With regard to the variables to measure play enhancement, we did not find any significant associations.

4.2 Qualitative explorations

The positive association between physical proximity of the teacher and play engagement that we found is in line with attachment theory and earlier studies. But the strength of the association between continuous proximity and greater levels of play engagement was not expected: this association was stronger than the associations of level of play engagement with the quality of the interaction and the indices to the physical and social structure of the environment (few sorts of play objects and few peers who walk in or out). Not in line with earlier studies was the absence of positive associations between play enhancement and play engagement. The next step in our study was further exploration of the data to develop hypotheses about underlying mechanisms that might explain our findings.

4.2.1 Proximity, emotional security, and two-sided interactions

Our quantitative analyses showed several variables positively related to play engagement covariate. When the teacher was nearby: peers were also nearby in 72.1% of the cases; there were more often two-sided interactions between teacher and child;

and there were fewer sorts of play objects around. Qualitative analyses of the cases in which these positive variables covariate showed that when the teacher was nearby, she was often calmly observing the children play and confirming their behaviour by just being there. For instance, teacher Cea who sat near Megan (3;11):

Cea is sitting next to Megan, who is trying very hard to finish quite a challenging puzzle. Megan desperately wants to but cannot do it on her own, and Cea gives her a hand by giving her suggestions to put a piece in a different place or asking questions. Every time she sees Megan can continue alone again, she withdraws by moving back her chair a little. Every once in a while, whenever Megan gets stuck, she says 'Ceaaaaa' and then Cea looks at her and gives confirmation or some tips. Megan finishes the whole puzzle.

Cea tries to stimulate Megan's effort to the full extent by waiting for Megan to ask for her help every time she gets stuck. She challenges her, and tells Megan to keep on trying, and only when she really stagnates, does Cea help her a little. At the right moment, she pulls back, once more affirming Megan's perseverance by giving her a compliment and then moving back her chair just a little. At the same time, the teacher stays available for other children to approach her with questions or requests. It is clear that Megan feels secure with the teacher's presence. The teacher has chosen to take a modest but a very clear role: she is simply there for her and at the same time challenges Megan to try and do this puzzle on her own without being intrusive. For this particular girl, it seems to be exactly what she needs.

When the teacher is nearby we observed that children actively looked for physical contact. For instance, Josey.

Josey (3;4) jumps around, looking for something to do, and follows the teacher who is walking around. After a while the teacher notices Josey and grabs her hand. She picks up a box of blocks, takes a seat onto the floor and starts building. Immediately a whole bunch of 2- and 3-year-olds come over and sit down beside her, enthusiastically starting to build too. Josey climbs on the lap of the teacher with a little booklet. The teacher allows her, giving her comfort and at the same time entertaining the other children.

If the teacher sits in a fixed place, the children can control the distance from her. Especially when the teacher sits on the ground, as in the case of Josey, young children can get physical contact when they need it. Physical contact such as cuddling or just giving a child a short reassuring stroke on the head, or in any way showing a little affection, gives young children emotional security and confidence to explore the room and feel free to play quietly. Sometimes the teacher also actively supported play of the children in a subgroup, as in the case of Branco and his three-year-old peers.

Branco (2;7) has taken a couple of musical instruments from the closet. The teacher sees him and suggests they play some music together. More children come over to the closet curiously, and the teacher starts handing out instruments to them. She takes a seat on the floor and immediately all the children gather around close to her on the floor and on her lap. She starts singing a song all the children know, and they enthusiastically start banging and playing on the instruments. After the first song, she asks: 'Would you like me to sing another song?' 'Yeaah!' the children shout. 'Who can think of a song for me to sing??' and the kids start calling out names of songs. She gives every single child the opportunity to name a song and sings it, with all them happily engaged in this game.

In this example the teacher sets up a collective, joint activity for the group. She involves every single child in the activity and is very involved herself as well. By asking questions

of the whole group, she keeps all of them active and wanting to be the first to get her attention. At the same time, she promotes social play and making music together. Most importantly: they have loads of fun. In this case, the active support of the teacher had a positive effect on the play engagement of the children. But in our quantitative analyses we did not find a significant effect on play engagement and the teacher's behaviour to enhance children's play. In our qualitative analyses we found two reasons that might explain why we did not find this effect at the quantitative level. First, we observed that teachers have difficulty in sharing their attention among a whole bunch of children.

Imane (3;4) is sitting at the table, drawing. A small group of 2- and 3-year old children are sitting beside her, as well as a teacher. The teacher shows the children how to draw a flower. She bends over towards Imane and says: 'Look, you see? Will you try to draw a little flower like this too?' and she looks away again, leaving Imane looking at the flower. The teacher turns her attention to another child. Imane calls the teacher for help: 'Teacheeeler, teacheeeler!' but the teacher does not respond. She is talking to another child. Imane keeps on calling her: 'teacheeler!'. Finally, the teacher looks at Imane and says: 'Yes, that is a nice flower you made, good job!'

The teacher has to divide her attention among the entire group. When an individual child gets some attention, for example, by receiving a compliment, the other children will try to get this kind of attention as well. 'Look at me teacher, look what I've made!' is often heard in child day care centres. What we have seen is that when a teacher decides to react positively to such an attempt to get attention, other children who are playing nearby get distracted immediately. Second, the teacher is sometimes too directive in guiding an activity in a small group.

Mouaad (3;0) is playing outside with 2- and 3-year old peers. The children are standing in front of the teacher who is holding a ball. She indicates which child can kick the ball next. They have to wait their turns. Mouaad is waiting, yawning, and looking around, not really engaged in this game. The teacher is quite harsh, wanting the children to play this game the way she likes to see it. She yells at a little boy: 'No, no! It's not your turn! It's Mouaad's turn first!' The boy doesn't understand. He just seems to want to kick the ball. Meanwhile, the other children are also waiting for their turn, not being engaged in the game the teacher is trying to set up.

This teacher obviously has good intentions in trying to make the children play together and share the ball, but has the opposite effect on their play engagement. She was too dominant and her interactions were one-sided.

4.2.2 *Walking in and out, disturbances, and one-sided interactions*

Whenever a teacher walks in and out of the children's play area, we immediately detected an effect. Children generally stopped playing and started social referencing: they looked up, started following the teacher around to make sure she was not leaving, or going to do something unexpected. The teacher was like a magnet: wherever she went, the children followed her. In 80.2% of the cases when the teachers walked in and out during the four-minute intervals, three or more peers also walked in and out. We also found that walking in and out of the teacher covariates with a greater likelihood of one-sided interactions and more sorts of play objects. Our qualitative analyses provided more insight into the mechanisms that might explain these relationships. When the teacher walks into a child's space, she often immediately starts to interact; from the

child's perspective this interaction was unexpected. The teachers often did not take time to establish shared attention. Suddenly the child is supposed to take part in this social interaction, which for a young child can require a great deal of energy to switch to, especially when the child was focused on his or her play. For instance, Prosper stopped playing because of the teacher.

Prosper (3;5) is playing at the table by himself with some toy animals, mainly dinosaurs. He is very focused on his game, growling and making loud animal noises: 'Rrraww!' He makes the animals fly and talk to each other. Suddenly, a teacher comes over and takes a seat at the table next to Prosper. She starts asking him questions: 'What are you doing, Prosper? What is the dinosaur doing?' Prosper looks up. He answers: 'They are fighting ...' She asks more questions. He answers obediently.

Teachers who walk around tend to engage in multiple short interactions with children: they came over, asked brief questions, and then left again ('Everything okay here, Tim? Are you having fun?'). And the teachers tend to rely too much on verbal contact without non-verbal communication that supports the verbal message. In general, these interactions were very well meant and kind, maybe even good for that overall atmosphere and promoting a good teacher-child relationship. However, if we focus on play engagement, we have clearly seen a distracting, disturbing effect on child's play. Because teachers who walked around went hand in hand with children who walked around and peers often disturbed each other. For instance, Leonie during building with Duplo stones.

Leonie(2;9) is playing with Duplo near Sally (2;5) and Noah (3;1). Two boys come closer to the girls, banging on cookware lids, singing 'Jingle Bells, jingle bells, jingle all the way!' Leonie looks up, slightly distracted, trying to stay focused on her play. The boys leave; Leonie can continue playing with the girls. Then Noah rises, grabbing some of the Lego blocks, pretending it is a gun, making loud noises: 'Pow, pow!' Leonie looks at her for a few seconds, then moves on with her Lego again. Another boy comes along, asking Leonie whether she would like a gift. 'Huh?' Leonie asks, distracted once again. The singing boys walk by again, Leonie watches them.

We have seen many cases in which children are simply incapable of finding a quiet, well-demarcated space to play privately or quietly with another child. Often the teachers have not structured the room into smaller areas; the whole room is very open and accessible. Because of too many stimuli, such as play objects, noise, or any kind of bustle, young children become agitated and cannot concentrate on their play.

4.2.3 *Friendly intruders*

In our study, it was quite exceptional that the teacher stayed in one place for longer than four minutes. Mostly the teachers appeared to be very busy, walking from one corner of the room to another. The teachers spent a great deal of time aimed at the creation of a nice, calm, and harmonious atmosphere in the group. They made sure that every child had something or someone to play with, for example, by dividing the children into small groups and having them play in different areas, meanwhile walking back and forth among those playing children, correcting unwanted behaviour, solving little conflicts, and handing children toys. The teachers often took little time to make contact with a particular child and, therefore, they entered into a one-sided regulation of the children's behaviour.

Anwar (2;7) stands with several peers beside the teacher who is trying to comfort a crying child. Anwar looks at the teacher and the crying child and then walks away with a peer to a laundry basket. The two boys start to lean on the basket that bends in response. The teacher calls: 'Hey, get off that basket. You have to tidy up, put the Lego in the box.' Anwar sits down on the floor and starts to make noise by striking two blocks against each other.

The importance of reciprocity in the teacher–child interactions became very clear in our qualitative analyses. When the teacher started a short interaction without really paying attention to the child, they often ignored the child's needs or desires. In a friendly tone they gave directive commands, such as 'I want you to clear away those toys, Rafik.' 'Please share those pieces of Lego, Anne.' 'Be nice!' or 'Go do that puzzle now, Tom.' Directive comments and negative behaviour regulations often did not result in obedience to the teacher, and they strongly reduced the likelihood of reaching a high level of play engagement. These teacher behaviours will not cause the child to evince a high level of play engagement because the teacher has not really connected with the child.

5. Discussion

Although there are no normative criteria for acceptable levels of play engagement for two- and three-year-olds during free play, we concluded that the level of play engagement in these Dutch childcare groups was less than what is reasonably possible. In 26.9% of the intervals we observed good engagement, which meant that these children were at least focused and involved in a play activity for at least two minutes. In our qualitative analyses we seldom observed that children were very engaged in the same activity for more than three minutes. A good level of engagement was generally reached in situations in which the teacher was nearby or peers played together without being interrupted by the teacher or other children. But the teacher was continuously nearby during the four-minute intervals in only 9.9% of the intervals. We are convinced that the level of play engagement of two- and three-year-olds will increase if the teachers sit near the children more often and stop walking around all the time.

Our study confirms the insights of the meta-analyses of Ahnert et al. (2006) that the teachers' sensitivity to group dynamics has a great influence on young children's behaviour. Our study provides a deeper insight into the mechanisms that may be at work in group settings. Rosenthal and Gatt (2011) point to the audience of peers in group settings. When the teacher sensitively responds to one child, she often disturbs the other children by walking in and out or by her voice. The teacher who walks around is not easily available for the children, and the children become restless. They also start walking around, disturbing peers, and engaging in social referencing. Our study confirms earlier studies stating that the younger the child, the more physical proximity and emotional refuelling by physical contact he or she needs (Mahler et al., 1975). We even found that physical proximity of the teacher has a much stronger impact on play engagement than the quality of interaction. This is an important point to stress, because the importance of physical availability, cuddling, and not walking around is rarely mentioned as main factors that influence play engagement.

For teachers, we would advise: sit down on the floor with the children in a well-structured social and physical environment. But probably this is more easily said than done. We hypothesise that this will imply a change from the pedagogical model

that underlies teacher behaviour: from an individualistic caring-controlling model to a group dynamic-facilitating model. We hypothesise that Dutch teachers' work is based on a model of individual care and control. Teachers try to take care of every individual child and to respond promptly and adequately to their signals. Therefore, they walk around to supervise the entire group and to be in control. Probably an overview of the whole group is easier in an open environment without corners and hiding places for the children. The teachers want to respond promptly to the children's signals; and the children learn to signal to get her attention. The group dynamic-facilitating model implies that the teacher takes into account the effects at group level. When she sits on the floor she has to trust the children that they will come to her if they need her; the children control whether they are near or far from the teacher. With regard to the two-sided interactions, the teacher has to develop ways of communication that involve an active role for the children. In our study we have seen fine examples of teachers who were able to involve a small group of children in two-sided interactions and to support peer play. But we also saw that many teachers needed some kind of training in this respect. The switch from a model of individual care and control to a group dynamic-facilitating model will not always be easy. The teachers have to discover new ways to deal with managerial problems in groups settings. Probably unforeseen obstacles will come up. But we are sure that the teachers' pleasure in observing the children and enhancing their play will overcome the obstacles. Above all, a higher level of play engagement in the children will result in more pleasure for the children and in more teacher satisfaction in caring and educating young children.

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