Play and psycho-social health of boys and girls aged four to six

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PLAY AND PSYCHO-SOCIAL HEALTH OF BOYS AND GIRLS AGED FOUR TO SIX

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Contents

1 General Introduction

The objectives addressed in this research are play, psycho-social health and the relation between play and psycho-social health of children from four to six years of age. The motive for researching the topic of play has been the commitment to the general concern of pedagogues, psychologists and paediatricians about the decrease of time provided for playing and the increase of time spent on teaching academic skills to young children (e.g. Ginsburg and Committees, 2006; Meijer, 2010; Miller & Almon, 2009; Nicolopoulou, 2010). Especially paediatricians emphasise the importance of play for a healthy development.

In the Netherlands the discourse on early childhood education about the contribution of play and playful learning on the one hand and programmatic instruction on the other hand started in 2006 (Goorhuis-Brouwer & Levering, 2006). This debate continues today (e.g. Goorhuis-Brouwer, 2011; Van Tuijl, 2011). With this current research we aim to contribute to this debate by investigating the time provided for playing at school, the art of playing and the knowledge of teachers who work with young children. Assuming that a variety in play fosters psycho-social health. In addition, playing at home in relation to psycho-social health is researched.

The motive for investigating the psycho-social health of children aged four to six is that this topic is important in today's education. Emotional and behavioural problems seem to be increasing according to common opinion. In addition, more attention is being paid to prevention, for example through the screening of four-year-olds on psycho-social problems by the municipality of Amsterdam (2009). However, according to the epidemiological study of Zeijl, Crone, Wiefferink, Keuzenkamp, & Reijneveld (2005) children are thriving predominantly.

In the current research we aim to investigate the dynamics of the psycho-social health of four-year-old children both on entry at elementary school and at six years of age, as well as the influence of life-events in the intermediate period.

Before giving an outline of this thesis, we will define the concepts play and psycho-social health.

1 Play

Although everyone immediately knows whether children (or adults) are playing, a definition of play is hard to give. Play is a complex phenomenon with a wide scope.
From a broad cultural-historical point of view, Huizinga in his study 'Homo Ludens' (1938) defined play as a factor of culture that transcends the physical realm and is imbued with spirit. According to Huizinga, the functions of play are to perform and to compete. Thus music, play as performance, lawsuits and sports can be considered as play. To its form, play is a free act, joyful, all engrossing, without direct material interest, executed within a certain space and time, with a specific order and distinguished from normal life by a temporary situation of disguise or pretence. The description of Huizinga from 1938 approaches the modern definition of play: play is pleasurable and enjoyable, it has no extrinsic goals, it is spontaneous and it involves active engagement, it is generally all-engrossing, often has a private reality, it is non-literal, and can contain a certain element of make-believe (Hirsh - Pasek, Golinkoff, Berk, & Singer, 2009; Rubin, Fein & VandenBerg, 1983).

Structure of play

Piaget (1962) based his research of the structure of play on the empirical studies of young children. Piaget found that different stages of play (functional, symbolic, games with rules) were characterised by three successive forms of intelligence, respectively: sensorimotor, representational and reflective cognition. In functional play, the child uses his senses and motor abilities, for example jumping just for the fun of jumping or making the noise of a riding car while moving a toy car. In symbolic play, children are able to represent a toy or a situation also when it is not present, for example to pretend that a wooden block is a telephone or to play that they are mechanics. Thus children create their own fantasy world by a shared symbolic world. When social relationships are formed and children become capable of distinguishing between different points of view (reflection) resulting in arrangements on how to act, games with rules appear. According to Piaget, constructional activity is not considered as play but as an occupation. However, by other researchers constructional activity is regarded as play because children can decide the result of their creations themselves (Smilansky,1968; Janssen- Vos, 2006).

Play and physiological maturation

In the first seven years the developing personality of the young child is closely linked to the physiological maturation (Goorhuis-Brouwer, 2004; Lievegoed, 2003; Schoorel, 1998).
The growth of cells and the framing of new connections in the brain are specific to this period, while after the age of seven there is a certain stabilisation of connections and formal brain structures (Goorhuis-Brouwer, 2004). Due to the plasticity of the

brain, development occurs spontaneously as a result of interaction with the environment and new neural networks will be formed. In order to develop new neural networks, it is necessary that the child acquires experiences by itself in a challenging environment (e.g. Hüther & Gebauer, 2006).

The *quality of play* may be summarised as the way of playing, the concentration and the duration of play (Van der Pol, 2005). The quality of play and the engagement with play is related to the well-being and general health of the child (Ginsburg & Committees, 2006; Lievegoed, 2003).

Play and development

Different forms of play contribute to diverse competencies in the domain of physical, emotional, cognitive, and social development (e.g. Güncü, Patt, & Kouba, 2002). The physical play (i.e. sensory and motor play) of a baby may be extended to rough-and- tumble play (running, chasing, fleeing, wrestling) in toddlerhood and beyond. Parents, siblings and peers may engage in this kind of play, in which also social aspects of competition and measurement are present (Pellegrini, 2002). Rough-and-tumble play often co-occurs with pretend play. In pretend play emotional and social qualities are developed (e.g Landreth, Homeyer, & Morrison, 2006). Children can conquer their fears, meet their imperfection and find solutions for difficult situations. They can express feelings and share experiences by playing different roles. For example, a girl that had witnessed a funeral played several times that there was a burial outside in the sand box outside with some other girls. In repeating play acts, emotions can be worked through. In pretend play or role-play, language and cognition are conditions for inventing, sharing and maintaining play acts (scripts, situations). Sometimes more time is spent on talking about what to play than to playing itself.

This negotiating and sharing is necessary to define the play roles of the partners (Brouwers, 2010; Bodrova & Leong, 2007). Recently Deunk (2009) found that children use more complex speech in playing with peers, especially in fantasy play, than in interaction with the teachers.

Social aspects of play

With respect to the social aspects of play, Parten (1932) defined a hierarchy in social participation, namely unoccupied behaviour, solitary play, onlooker behaviour, parallel play, associative play, and cooperative play. While solitary play (playing by oneself) and parallel play (playing at his own by the side of another child) often is found in children under the age of three, associative play (in which the play of one child is associated with the play of another child) and cooperative play (playing together) is often found from the age of three and beyond. Up until now, this classification

is being used and additional research has shined new light upon Parten's theory: 'Nonsocial play categories (onlooker - and unoccupied behaviour) may occur as a result of children's preference rather than their inability to engage in social pretend play' (Göncü, Patt, & Kouba, 2002, p.420). And: '[...] children may appear to engage in solitary play when such solitariness is actually precipitated by an ongoing social play' (ibid, p.420).

Playing at home

Play is universal. However, attitudes towards play and the implications for parenting are dependent on social and cultural backgrounds (Roopnarine & Krishnakumar, 2006).

The availability of toys and playgrounds differ according to socio-economic circumstances. In addition, what children are allowed to play may differ according to social rules and with respect to gender. Whether parents play with their children, how much, and to what extent, is also dependent on the culture. For example, Rogoff, Göncü, Mistry and Mosier (1993, in Roopnarine & Krishnakumar, 2006) found that 47% of the parents in the USA, 7% in San Pedro (Guatemala), and 24 % in Dohl-in-Pathi (India) acted as playmates to their toddlers.

Playing at school - Free play, guided play and pre-scribed play

Play in general refers to an activity voluntarily undertaken by the child itself, it is thus free play or child- initiated play. Sometimes adults help children to initiate play or to reach a higher level of play by supplying ideas (Brouwers, 2010). According to the socio-cultural theory of Vygotski and Leon'tev this practice is known as 'scaffolding' (Bodrova & Leong, 2007).

In the Netherlands, before 1985 the school programme for children from four to six years of age was mainly play based and was quite different from the education of children aged six to twelve. In addition, the teacher education was directed respectively to children 4-6 years of age and to children 6-12 years of age. However, since 1985 one curriculum for children aged four to twelve years has been developed, based on the theory of non-interrupted learning lines. This meant that within the subjects of reading, spelling and mathematics a continuous line was designed for all children from the ages four to twelve. Moreover, the idea of politicians and educationalists was that arrearage could be prevented by starting with formal learning as early as possible. In other European countries as well in the United States a comparable development can be observed (OECD, 2006).

The predominance of an educational view over a developmental view becomes visible in programmes for young children in which play themes are prescribed like 'Piramide'(Van Kuyk, 2003). For example, if the instruction for playing concerns

'hygiene and putting a baby doll in a bath', the bath can not be used as a helmet or as something to collect beans in. Thus play activities are teacher-initiated and subordinated to learning skills (Nicolopolou, 2010).
Since the junction of the two different teacher educations to one, specific knowledge of the development of young children has been diminished (Levering, 2006; Brouwers, 2010). This omission has been noticed lately and a new specialisation with respect to young children will be established in the teacher education training (HBO raad [Board of higher education], 2009). However, in today's classes for young children numerous teachers work without this specialisation.

The present situation summons to questions about the opinions of teachers with respect to play and psycho-social development as well as the kind of play children show in a classroom setting and at home. Research on play in today's classrooms is scarce, especially when it concerns a whole group of children (Van der Kooy, 2007). In addition, research on playing at home in relation to psycho-social development is a new topic of play research.

First aim of the research project

The first aim of the research project was to investigate the play behaviour of children in a classroom setting, as well as the views of teachers and parents with respect to play and psycho-social development.

2 Psycho-social health

Psycho-social health refers to the emotional and social competencies of the individual to cope adequately with different and difficult circumstances (World Health Organization, 2001).
In young children, the emotional and social competencies are developing in a dynamic process of interaction with the parents and the environment. The transition from home (or child-care) to regular school attendance may cause (temporary) psycho-social problems in three domains. Firstly, the communication with peers and adults places demands on the emotional understanding and social competence of children (Fabes, Gaertner, & Popp, 2006). Secondly, the increasing demands of the school programme may cause problems (Meijer, 2006). Thirdly, latent or existing psycho-social problems may become apparent in the new situation (Carrière, 2009). In addition, boys and girls may react differently to their entry into school.

Prevalence of psycho-social problems

The prevalence rate of psycho-social problems among children in epidemiological studies from different European countries differs, depending on the range of age and on the gender of the children, the measures and the informants (parents

and/or teachers). In the Dutch Survey 'Kinderen in Nederland [Children in the Netherlands]' (Zeijl, Crone, Wiefferink, Keuzenkamp, & Reijneveld, 2005) prevalence of at least one serious problem was found among 10 – 15 % of children aged 0-12 years. However, in another Dutch Survey (Brugman, Reijneveld, Verhulst, & Verloove - Vanhorick, 2001) prevalence of one or more psycho-social problems was found among 25% of the children aged 5 – 15 years. These considerable differences in outcomes may be explained by the instruments used and the divergence of age of the children.

Gender

Between boys and girls differences are apparent in relation to psycho-social health. In the German 'Kinder und Gesundheits Survey' [Children and Health Survey] (Hölling, Erhart, Ravens-Sieberer, & Schlack, 2007), prevalence of psycho-social problems was found among 11% of the 3-6 years old girls and among 16% of the 3-6 years old boys.

In all age categories Child Health Professionals (CHP's) in the Netherlands more often identified psycho-social problems among boys than among girls (Zeijl et al., 2005). This is in line with the findings of Ihle and Esser (2002) that until age 13, mental disorders are more common with boys and that prevalence becomes similar for both sexes in adolescence. Of all mental disorders, depression in early childhood and beyond is an underestimated mental health problem (Beyer & Furniss, 2007; Ihle & Esser, 2002; Ravens-Sieberer et al., 2008). In the research of Ravens-Sieberer et al. (2008) the diagnosis of depression was determined among 10.0% (7.1- 14.0) of girls and among 11.4 % (8.6-14.9) of boys between the ages of 7 and 17.

Assessments of parents and teachers

Parents and teachers may differ in their assessments of psycho- social problems, depending on the situation in which they meet the children and in comparison to other children (Achenbach, McConaughy, & Howell, 1987). This understandable difference is a neglected issue in research on psycho-social health.

Dynamical processes and influence of life-events

For young children, the onset and proceeding of emotional and behavioural problems is a dynamic process that is due to the normal variability of development (Van Geert & Steenbeek, 2005; Verhulst, 2005). Therefore temporary problems have to be distinguished from lasting problems. Moreover, vulnerable children may react severely to life-events like decease of kinship while other children are more resilient (Asscher & Paulussen-Hoogenboom, 2005; Masten, 2001). Whether problems may resolve or last is also influenced by the risk- factors and protective factors of the family, school and environment.

Second aim of the research project

The second aim of the research project was to investigate the psycho-social health of children at the ages of four and six as observed by parents and teachers, and the influence of life-events on psycho-social health in the intermediate period.

Outline of the Thesis

The first chapter concerns the general introduction about play and psycho-social health. The complex phenomenon of play is explored and aspects of psycho-social health described.

In chapter 2, the views of teachers on psycho-social development in children four to six years of age are described. The teachers have been interviewed and a qualitative research method has been applied to analyse the interviews.

In chapter 3, the development is described of an observation instrument in co-operation with experienced teachers and experts on play. The objective of developing the instrument was to facilitate the observation of a group of playing children in a classroom setting.

In chapter 4, the play behaviour of children aged four to six is researched. Video recordings, captured in different schools, have been analysed with the help of the observation instrument described in chapter 3.

In chapter 5, playing at home is investigated. Parents assessed the play behaviour of their four-years-old children and the quality of their play. Correlations between the scores on the questionnaire of psycho-social health (Child Behavior Checklist) and play have been researched.

In chapter 6, the psycho-social health of four-year old children on entry at elementary school assessed by parents and teachers, is investigated.

In chapter 7, the psycho-social health in relation to life-events is described in the follow-up study at six years of age. Specific attention is given to the dynamics within the individual amelioration and deterioration of the scores on the questionnaires.

In chapter 8, a general discussion and conclusion is presented on the importance of play and psycho-social health.

In chapter 9 an English summary is given and in chapter 10 a Dutch summary.

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2 Teachers' Views on Psycho-social development in young children

Abstract

Psycho-social wellbeing is an important area of attention in early childhood care and education because when psycho-social problems appear, they can often persist past childhood.
Based on their working experience with many different children, teachers of young children are aware that they make important contributions to the healthy social and emotional development. The aim of this study is to explore the views of experienced teachers in facilitating the psycho-social development of children from four to six years of age.
Twenty teams of teachers, amounting in total to 52 teachers, were interviewed during small group sessions. The transcribed interviews were analysed qualitatively with a framework based on theories of play and psycho-social development. The findings were summarised according to particular themes.
As a result of the study the following themes appeared. Teachers described play as an integral part of the psycho-social development of children in which the conditions for play, the unique development of the child and the role of the teacher are included. Moreover, teachers found that especially 'pretend play', in which children can express themselves in their own way, contributes to communication skills and social cognition.
The findings may contribute to the growing discussion in early childhood education and care about the significance of play and the time provided for playing.

Berkhout, L., Dolk, M., & Goorhuis-Brouwer, S.M. (2010). Teachers views on psycho-social development in children from four to six years of age. *British journal of educational and child psychology, 27, 103-112.*

Introduction

The psycho-social well-being of children depends on both the emotional and the social aspects of development (Eisenberg, 2006) and is a basic pre-requisite of emotional, social and academic adjustment to school (Ladd, Herald, & Kochel, 2006). Predictors of adaptation or maladjustment to the school situation are social behaviour (e.g. aggression, inattentiveness), disposition (e.g. temperament), and interactive actions (e.g. interactive conflict) (Rubin, Bukowski, & Parker, 2006). In addition, the experiences that children bring to school from pre-school, day care and their home situation will predict their social and emotional behaviour (e.g. Furniss, Beyer, & Guggenmoos, 2006; Izard et al., 2001). The school context is the primary venue for experiences with peers and the place where children form friendships and take part in group activities.

One of the most characteristic aspects of the behaviour of young children is play. Through play and social participation children learn to control their emotions. This helps them to develop psycho-social self-regulation, which refers to the ability to act in a deliberate, planned manner (Berk & Ogan, 2006; Bodrova & Leong, 2007). Lack of psycho-social regulation is correlated with aggression and lack of social skills, these leading to outbursts and conflicts (Rubin et al., 2006). In addition, play facilitates problem-solving capacities (Singer, Golinkoff, & Hirsh-Pasek, 2006). Recent research on the mediating processes between children's aggressive behaviour and teacher –child conflict reveals that the beliefs of the teachers regarding their ability to cope with children's problem behaviour is an intermediate variable in this process. (Doumen, Verschueren, & Buyse, 2009).

Play in general is a complex phenomenon because it covers different forms of play activities and behaviour. Researchers have recognised social, emotional, physical and cognitive dimensions in play and have given attention to both play context and functional or motivational characteristics of play behaviour (e.g. Bergen, 2002; Johnson, 2006). In the classification of play, several forms are distinguished, among others sensory-, physical- , constructive-, and pretend play (Meire, 2007; Rubin, Fein & Vandenberg, 1983). Each type of play has its own merit and contribution to development (e.g. Goncu, 1993; Jambor & van Gils, 2007; Sawyer, 1997).
Recent research in discourse practices in pre-school shows that children in pretend play (in which children act 'as if'), use relatively more complex speech acts in interactions with peers than they do in interaction with the teacher. Children even alter their speech to suit the needs of their listeners (Deunk, 2009). Furthermore, pretend

play or socio-dramatic play serves increasingly sophisticated psychological functions. Rubin et al., 2006 concluded that Social pretence provides opportunities for developing communication skills. Subsequently, it allows children opportunities to negotiate over roles, rules, and play themes and to practice a variety of roles in particular play scripts. Thus the addition of understanding pretence and sharing this understanding with others represents a significant milestone in the social lives of young children. (p. 590)

During play time (choice time) in school, children can practise with different roles in which they also can express strong feelings and work through the experiences of daily life.
Even though the importance of play is emphasised by many researchers, play is becoming a neglected issue (Miller & Almon, 2009). The significance of play and time provided for playing is a growing point of discussion in early childhood education and care.

In the US, under the influence of the No Child Left Behind Policy, cognitive skills (maths and language) are emphasised in pre-school (Hirsh-Pasek et al., 2009). As a result, child-initiated or free play has diminished in favour of the development of academic skills by playful instruction (Bodrova & Leong, 2003; Ginsburg et al., 2006; Nicolopulou, 2010; Singer et al., 2006). In a recent study (Miller & Almon, 2009), research was conducted on the average number of minutes spent daily on different activities in pre-school in two large cities (Los Angeles and New York City). The pre-schoolers spent four to six times longer being instructed and tested in literacy and mathematics (two to three hours per day) than in free play or 'choice time' (30 minutes or less).

In the Netherlands the same trend as in the US is observed, i.e. tackling the problems of disadvantaged children by increasing the time that is spend on academic skills (Goorhuis-Brouwer & Levering, 2006) and by emphasising playful instruction (Meijer, 2010).
Playful instruction refers to a way of instruction that serves the goal of teaching (academic) skills to children. This is an essential difference from (free) play that serves the intrinsic goals of the child by which the basis for later cognitive academic skills is developed (Goorhuis-Brouwer & Imelman, 2010).

Research on the experience and knowledge of professionals in the field of education and childcare can presumably make a contribution to the recent discussions on play and on the relation between play and psycho-social development.
The focus in this paper is on teachers of children aged four to six in elementary education in the Netherlands. Given the importance of pretend play for psycho-social development, the aim of our study is to research the views of experienced teachers

on this topic and to compare these views with theories on play and psycho-social development.
We addressed the following two research questions:
Which elements of play do teachers mentioned spontaneously?
Which aspects of play are do experienced teachers view as important for psycho-social development?

Method

Participants

Twenty primary schools participated in the study. The participating teams of school teachers consisted of one to three members, and the total sample was 52 teachers. The teachers were qualified and experienced (Mean years of experience=19.6, SD= 9.7). The schools were situated in various small and middle sized towns (between 28.000 -170.000 inhabitants) spread over the Netherlands. In the Netherlands, children enter elementary school at the age of four, school attendance is compulsory from the age of five. The curriculum of elementary school is designed for ages four through twelve. Teachers generally have a bachelor degree in education. The greater part of the school classes (87.5 %) in this study were heterogeneous (ages 4-6 together), 12.5 % were homogeneous (age 4 apart, ages 5-6 together). The mean number of children in the class was 18.7 (SD 4.6; min. 8, max. 29 children). The school populations included children of various social classes, i.e. students from lower, middle and higher social economic status.

Procedure

The 20 teams of school teachers were interviewed in their own school by one of the researchers in 2007. The interviews were tape recorded and transcribed.
Two open questions were posed: 'What do you understand by play?' and 'Which aspects of play contribute to psycho-social development according to your experience?'
Out of the 20 interviews, two were with individual teachers (10%), five were with two teachers (25%), 12 were with three teachers (60%), and one interview was with four teachers (5%). In the group interviews the teachers could expand on the ideas of their colleagues and in a way represent the opinion of the school team.
The transcribed interviews were divided into topic units (N= 381). That is to say that each unit represented a specific subject (topic) and contained minimal one and maximal eight sentences, on average three sentences, about the same subject. The lowest number of sentences that formed an interview was 26, the highest number of sentences was 99 (Mean= 52.4, SD=18.8).
The topic units were then categorized. The criteria used to determine the categories

for evaluating the transcriptions was based on theories of play and of psycho-social development. For the two different questions, two separate sets of categories were formulated.

To analyse the first question 'what do you understand by play?' categories of play were derived from reviews on play by Hirsh- Pasek et al. (2009) and Rubin, Fein and Vandenberg (1983). The following eight features that characterise ordinary play were distinguished: (P1)- Play is pleasurable and enjoyable; (P2)- Play has no extrinsic goals (i.e. it is concerned with process rather than product); (P3)- Play is spontaneous; (P4)- Play is controlled by the players; (P5)- Play is non literal – it can contain certain elements of make-believe; (P6)- Play has a private reality; (P7)- Play is free of externally imposed rules; (P8)- Play involves active engagement (is all engrossing). These eight categories have a distinct emotional aspect: children experience joy and pleasure when they play. The action is spontaneous. It can give feelings of mastery when the players have control over the process of playing. When playing, children can create their own make-believe world ("as if") in which they are King or Queen and where they can issue their own rules. This private reality can be all engrossing.

Four main categories were formulated to analyse the answers to the second research question 'Which aspects of play contribute to psycho-social development according to your experience?' These categories with an emphasis on social development were summarised from theories on child development (Goncu, 1993; Rubin et al., 2006; Sawyer, 1997; Verhulst, 2005). The following four categories were distinguished: S1- Being a person (a self) between others; S2- Developing communication skills; S3- Developing social cognition; S4- Experienced learning.

The classification resulted in eight so called 'play categories' (P1 to P8) and four so called 'social' categories (S1 to S4) amounting in total to 12 categories. Each topic unit was given a unique code and no more than one code could be assigned to a unit. If a unit could not be coded with an above mentioned category, then it was coded as ′other′.

To analyse the category 'other' in the next step in the process of qualitative analysis, four clusters of themes were inductively formulated (Corbin & Strauss, 2008). These clusters were: C1- Safe context and stimulating environment, C2- Unique individual development , C3- Watchful stimulating and protecting, C4- The importance of play for later life. Topics that could not be ascribed to one of the four clusters, were designated as 'miscellaneous'.

Analysis

The interviews were analysed qualitatively (Arksey & Knight, 1999) in two steps.

In the first step of the analysis, the categories were applied to the topic units of the interviews and were rated by two qualified teacher trainers. The inter-observer reliabil-

ity was 0.63 (Cohen's Kappa). According to Cicetti and Sparrow (1981) and Landis and Koch (1977), known for their classification of interpreting Cohen's Kappa, the strength of agreement with a value of 0.63 is "substantial". In Table 1, examples of quotations are presented.
In the second step of the analysis, a distinction was made between two groups of quotes: the quotes that belonged to one of the 12 categories (eight about play features (P) and four about the contribution to psycho-social (S) development) and the quotes belonging to the so called 'other' category. Subsequently the entire 'other' category was analysed separately. As explained in the procedure section, four clusters of themes (C1, C2, C3 and C4) were formulated inductively.
In Table 2 examples of quotations are presented.

Results

After the first step of the qualitative analysis of the interviews conducted, 44 % of the topic units were ascribed to the twelve categories derived from theories on play and psycho-social development and 56 % of the topic units were ascribed to the 'other' category.
The results of the analysis of 381 topic units are shown in Table 3.
In the eight 'play' categories, the categories numbered P5, P6 and P7 are mentioned most often. The categories of 'make-believe', 'private reality' and 'freedom from externally imposed rules' represent for teachers important features of play. As for the 'social' categories, in order of quantity, the category 'self and the other person' (S1) is mentioned most often, followed by 'experienced learning' (S4) and the categories 'social cognition' (S3) and 'communication' (S4). Teachers also seem to value the potential in play of becoming an individual that learns through experiences besides developing communication and social cognitive skills.

Results of the second step of the analysis

In total 224 (56 %) out of 381 units belonged to the 'other' category. Four clusters were distinguished in the 'other' category. Units that could not be assigned to one of the four clusters were designated as miscellaneous. See Table 4.

Table 1: Play features and contribution to psycho-social development and examples of quotations.

Play feature	**Quotation**
P1. Pleasurable	'An activity in which you have fun'
P2. No extrinsic goals	'It does not need to have a goal in the end'
P3. Spontaneous	'That there is an impulse to do something'

P4. Controlled by the players	´It is nice in play that anybody can decide on what to do'
P5. Non literal, certain elements of make believe	´They were playing doctor and patient. The doctor said: it will take another eight weeks before your bandages are to taken off. I said [teacher] let's count together – one, two, three..… [child] Oh, does it take so long?' 'That they are imagining things, adding images to their experiences'
P6. Private reality	'Yesterday I [the teacher] saw all the small cards mixed on the floor and one child was laying there between them. So I asked: what are you doing? And he said I am Spatter, a dolphin. Well I [teacher] never have thought to play in that way with those cards'
P7. Free of externally imposed rules	´For me, playing has a kind of freedom in it'; 'The freedom to choose your own path. One child quickly shifts the designated play areas while another is attracted by one and the same jigsaw for a long time'; 'That you can choose where to begin with. Later on you have to start all together with language lessons´
P8. Involves active engagement	´The involvement, dedication of the child to which it is doing. That it is enough just being with himself'
Contribution to psycho-social development	**Quotations**
S1. Being a person between others	'That you learn about yourself through play. That one is the leader and you are not. If you don't have any feelings of leadership in yourself, it's going to wring. A kind of relation and what is my place in it'
S2. Developing communication skills	´Making appointments like: you are the teacher and I am the child, and we are going to do…'; 'That they meet each other [in play] and that they communicate and use language'
S3. Social cognition	'That they have a kind of a growing inner space for another child, that they can understand what the other is saying and that they can meet each other'

S4. Experienced learning	'A girl in my class just had experienced a removal. During play time she was dragging all kind of things to a heap and said that she would sleep there'

Table 2: Examples of quotations belonging to a cluster of themes

Cluster	**Quotation**
C1. Safe context and stimulating environment	. ..'I listen – are the children not saying queer things to each other, are they not quarrelling..' 'The environment has to be stimulating. Therefore we often change the corners. You can not have the dolls' corner for the whole year'.
C2. Unique individual development	' If a child just has come in the class.. at first it has to feel safe at school, emotionally free and curious and than it will start playing' 'They learn through play, first with their body and senses and than in movement'
C3. Watchful stimulating and protecting	' I do not very much interfere when they have a conflict… I just separate them and then they find a solution by themselves'
C4. Importance of play for later life	'Fantasy play gives flexibility in thinking later'; 'Playing is a foundation for life'
Miscellaneous	´Playing is flow' ´Play is universal and it connects people'

Table 3: Opinions, in percentages, about the essence of play and constituting elements for psycho-social development.

Code	**Percent**	**Category**
P1	2.4	Pleasurable and enjoyable
P2	1.0	No extrinsic goals; Concerned with process rather than product
P3	2.9	Spontaneous
P4	1.8	Controlled by the players
P5	4.7	Non literal; can contain certain elements of make-believe.
P6	3.9	Private reality
P7	4.2	Free of externally imposed rules
P8	2.4	Involves active engagement/ is all engrossing
S1	6.6	Self and the other person
S2	3.9	Communication skills. Negotiate about rules and roles by language or gestures

S3	4.5	Social cognition. The ability to observe and interpret feelings, thoughts and intentions of other persons
S4	5.5	Experienced learning. Express feelings and go through experiences
	56.2	Other
N=381	100.0	

P = category Play S = category Social

Table 4: Clusters in the ´other´ category

Clusters	**Percent**	**Themes**
C1. Safe context and stimulating environment. Conditions for play	8.4 %	- Safety, the child must feel secure - Stimulating environment
C2. Unique individual development	65.6 %	- Imitate; Becoming acquainted and connected to the world - Developing fantasy, physical expression, playful learning - Stimulate, learn from each other - Allow being who you are - Discovering, exploring - Time to mature emotionally
C3. Watchful stimulating and protecting. Role of the teacher	10.1 %	- Protecting, limiting, attentively watching. - Stimulating
C4. Importance of play for later life	11.0 %	- Fantasy is the basis for later creativity - Play is like society in miniature
Miscellaneous	4.8 %	- Play has no beginning or ending - Play differentiates
	100 %	

In the first cluster the item of 'safety and security' is mentioned as a condition for playing. This item points to the basis of emotional stability and realates to the attitude of the teacher in shaping the pedagogical climate and the concrete classroom environment in which children can grow. Furthermore, it is notable that 66 % of the quotes concern features regarding the unique individual development of children. The item 'becoming acquainted and connected to the world' points to a process that starts in early childhood and is still going on during pre-school and beyond. The item 'time to mature emotionally' points to the individual differences children show in emotional growth. 'Allow being who you are' relates to the feature of socio-dramatic play that allows children to adopt roles that best fits their needs. In the third cluster items are mentioned that refer to the specific role of the teacher in alternating with attentively watching on the one hand and stimulating on the other hand. A number

of quotes are ascribed to the importance of play features for later life; children can experience different qualities in the roles they play and as a result develop different competencies.

Discussion

The aim of this study was to investigate the perspectives of professional teachers concerning the issues of play and the contribution of play to the psycho-social development of children.

The results show that teachers of young children understand play as being characterised by spontaneity, pleasure, 'make believe' and freedom from externally imposed rules. They also see that experienced learning through play in communication with peers offers a playground for the developing personality.

The teachers broadened the theoretical categories to other developmental aspects as well. Teachers described play and the contribution play makes to the psycho-social development as an integral process. The conditions for play, the unique individual development and the role as a teacher are included in this process..

Teachers mentioned a stimulating environment and the need for safety and security as conditions for play. These aspects are not limited to play: they also point to the pedagogical climate in the classroom. Emotional support is underpinned by the quotations in which the teachers' competence of sensitivity to the child needs is mentioned (e.g. time to mature emotionally and acceptance of the child's uniqueness). In addition, the teachers' role of protecting, limiting and stimulating may also be understood as a method of classroom management (Rimm-Kaufmann et al., 2009).

A large number of the quotes were applied to the cluster 'the unique individual development' supporting the view that emotional and social growth of children follow different individual pathways (Eisenberg, 2006). In this same cluster, activities were mentioned that are child-initiated such as imitating, exploring, getting acquainted to the world. These activities, often in communication with peers, promote self-regulation and feelings of mastery (Bodrova & Leong, 2007; Verhulst, 2005).

The teachers interviewed for this study were experienced professionals. Therefore, their views and perspectives offer additional significant insights regarding children at play and their psycho-social development. In the education of future teachers it may be helpful when the theory is supplemented with the views of experienced teachers.

Furthermore, the findings of this study may contribute to the discussion on play and playful learning. This discussion centres on two points, namely time to play and opinions on play and playful learning. The teachers in this study support the theory by their own experiences that play, especially socio-dramatic play, widely contributes to psycho-social development. Hence time for playing at school is important. However, both in the US and in the Netherlands nowadays more time is spending on academic skills at the expense of time for playing. In addition, in the current study

teachers mainly referred to play as a free choice activity and did not make references to playful instruction in relation to psycho-social development.

The findings may have implications for educational psychologists who are involved in early years education; the importance of play for psycho-social development in an educational setting may be promoted in the consultation and the supervision of teachers. In particular the observation of play behaviour can offer insights as to whether the emotional and social development is appropriate to the child's age (Berkhout, Dolk & Goorhuis-Brouwer, 2008).

This can be followed by advice and intervention in situations where psycho-social problems occur.

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3 Observation Instrument of Play behaviour in a classroom setting

Abstract

The objective of this study was to develop an instrument to observe the play behaviour of a whole group of children from four to six years of age in a classroom setting on the basis of video recording. The instrument was developed in collaboration with experienced teachers and experts on play. Categories of play were derived from the literature and daily practice in Dutch classrooms (i.e. sensory, motor, construction, make-believe play and arts-and-games). Analysis of the video with the help of the observation instrument showed that the between observer reliability was almost perfect. The simple and clearly structured instrument may be used by teachers or in teachers' education.

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Introduction

In the past decade, the discourse on early childhood education and care for children 0-4 years of age in the Netherlands has addressed the quality of child care centres as well as the content of the pedagogical programme (e.g Gevers Deynoot-Schaub & Riksen-Walraven, 2005; Groeneveld, 2010). At the same time, the discourse on the education of children 4-12 years of age focussed on themes such as what educational programmes need to be developed to tackle the language problems of immigrant children in big cities and of Dutch children with a low social economic status background. Early literacy is aimed at improving the academic level of the students. Cognitive achievement nowadays is an important topic with respect to the knowledge economy. As a result, a tendency to start formal learning as early as possible is observed. Attending school in the Netherlands is compulsory from the age of five, but this age will probably be lowered to four years in 2015 (Onderwijsraad, 2010).
In addition, the programmes of early childhood centres are becoming more education oriented (Riksen-Walraven, 2008; Van der Aalsvoort, Prakke, König, & Goorhuis, 2010). Although the results of early childhood education programmes are sometimes positive, they are not always lasting (e.g Early, Maxwell, Burchinal et al., 2007; Leseman & Van der Leij, 2004).
In other western European countries the same tendency to start formal learning earlier is promoted (OECD, 2006).

In the US different viewpoints exist on early childhood education, depending on theoretical and political backgrounds (e.g. Howes, Burchinal, Pianta, Bryant, Early, Clifford et al., 2008; Singer, Golinkoff, & Hirsh-Pasek, 2006). These viewpoints result in a new discussion about either more teacher-initiated practices or more child-initiated activities in the domain of playing and learning. Since more time in pre-school and school has to be spend on learning activities, time for playing in school is 'under siege'(Singer et al., 2006; Zigler & Bishop-Josef, 2004). In a recent study the average number of minutes spent daily on different activities in kindergartens in two cities (Los Angeles and New York City) was researched. The kindergartners spent four to six times longer being instructed and tested in literacy and math (2-3 hours/day) than in free play or "choice time" (30 minutes or less) (Miller & Almon, 2009). The pressure on the academic achievement of young children has increased (Ginsburg & Committees, 2006; Hirsh-Pasek, Golinkoff, Berk & Singer, 2009).
Although developmental psychologists emphasise the important contributions of play

to physical, cognitive, emotional and social development (e.g.Fromberg & Bergen, 2006; Meire, 2007; Rubin, Fein, & Vandenberg, 1983), this topic is increasingly neglected (Bodrova & Leong, 2003; Miller & Almon, 2009; Nicolopoulou, 2010). Moreover, nowadays professionals in early education and care are not sufficiently acquainted with the developmental aspects of play (e.g. Howard, 2010; König, 2009). In the Netherlands since 1985, the specialism of teaching young children has been removed from the formal training programme of teachers (Levering, 2006).
In light of the above mentioned discourse and the lack in the education of teachers, we will focus in this study on the observation of different forms of play because these forms contribute to the emotional, social, physical and cognitive development of young children (Berkhout, Dolk, & Goorhuis-Brouwer, 2010; Bodrova & Leong, 2007; Jambor & van Gils, 2007; Singer et al., 2006).

Observation instruments

The use of video recording to assess play skills has increased (Glick Gross, 2006; Jacobs, Kawanaka, & Stigler, 1999). The main advantage of video recording is that the material can be watched repeatedly and therefore observations can be more precise. In addition, video recording facilitates capturing the fluid, contiguous classroom events to help ensure a more authentic view of classroom behaviours and the ability to record contextual factors.
Disadvantages of video recording are that when only one camera is used, the scope is limited to one part of the classroom at the same time (Walsh, Bakir, Lee, Chung, Y-H, Chung K. et al., 2007). Scoring behaviour from the video tapes is often time consuming.
Children may be disturbed in their play spaces when adults interrupt them with cameras. Moreover, parents may resist having their children recorded on video (Glick Gross, 2006).
To make observations of a whole group of playing children at the same time is difficult. The existing observation instruments are developed for observing individuals rather than groups.
The Play Observation Scale (POS) is an instrument that combines play forms (i.e. functional play, constructive play, dramatic play and play with rules) and social participation (Rubin, 2001). Rubin based the POS on the play forms of Piaget (1962) and Smilansky (1968) and on Parten's (1932) hierarchy of social participation (i.e. unoccupied behaviour, solitary play, onlooker behaviour, parallel play, associative play, and cooperative play).
The classification of McCune-Nicolich (1980) is often used as a base to elaborate a distinctive scale for a specific goal, for example as an observation scale for the play behaviour of children with an autistic spectrum disorder or children with an intellectual disability (Van der Pol, 2005). Sometimes a play observation instrument is

designed just for one research topic, focusing on a specific situation or a specific target group, such as for instance the research on make-believe play and private speech in two types of schools (Berk, Mann & Ogan, 2006).
To date, existing instruments are not suitable for the observation of a whole group at the same time by one observer. Therefore a simple and clearly structured new observation instrument had to be developed. The use of video recording facilitates capturing the dynamics of a whole group of playing children.

Research aim

The development of an instrument based on videorecording to observe different forms of play among children from four to six years of age in a classroom setting.
The following connected research questions will be addressed:
a) Which categories of play can be empirically distinguished so that they cover the play behaviour of children from four to six years of age in a classroom setting?
b) What is the between-observer reliability when observers rate the playing behaviour of a group of children, captured on video, with the help of the distinguished categories?

Method

Participants

a) Four experienced teachers (mean years of experience 17.5; SD 2.08; min. 15, max. 20 years) of children aged four to six and two experts on play (play consultants) with respect to research question.
b) Three different groups of trained undergraduate students, in total 17 students, from a Teacher Education University (Bachelor) observed and rated the same video recording of one class of playing children. The class consisted of a heterogeneous age group (four to six years of age) of 15 children in total. All parents gave informed consent for video recording in the classroom with the restriction that the tape would be used for research purpose only.

Procedure

a) The teachers and the experts on play collaborated with the first author to select and categorise different play forms, based on an exchange between empirically observed play behaviour in the classrooms and the literature (Bjorklund & Brown, 1998; Bodrova et al., 2007; Lillard, 1993; Miller & Almon, 2009; Ness & Farenga, 2007; Pellegrini & Smith, 1998; Piaget, 1962). General notions of play behaviour were discussed and criterions for selecting play forms from the literature were chosen. The first criterion for selecting specific forms of play was the contribution to one of the domains of early childhood development (i.e. emotional, social, physical and

cognitive). The play forms together should reflect the total development of the young child. The second criterion was that the play forms could be distinguished clearly during observation.

b) The video recording was captured by the first author on one day in the classroom during play time (45 minutes). The camera stood on a tripod on a fixed place so that the greatest part of the classroom was visible. The whole period of play time was recorded continuously. Every five minutes a pan was made to collect observations of all the children.

Coding of the videotape

A time sampling method was chosen to notate the play activity of each child within subsequent time slots of five minutes. This was in line with the video recording during which a pan was made each five minutes.
The students of the Teacher Education University were first trained in observing the distinction between play and non-play behaviour by watching several instruction videos about the different categories of play, both in busy and in quiet classrooms. Difficulties in coding were tackled by appointments: when there was confusion about the category of play because for example a child started with construction play but then engaged in fantasy play, the dominant play form within that time slot was coded. The category 'arts and games' (activities at desk) covers several different activities including drawing and painting. Although these activities are creative and foster cognitive and imaginative skills, they were not rated as make-believe play.

Analysis and between observer reliability

The same video of the free play behaviour of the target class was analysed by three different groups of trained students (N_1= 5; N_2= 6; N_3= 6) with the help of the observation instrument. According to Martin & Bateson (2007) the Kendall coefficient of concordance (W) is suitable for quantifying the overall agreement among three or more observers. The coefficient W is a non-parametric statistic that expresses the degree of associations among sets of rankings (Siegel & Castellan, 1988). Kendall's W ranges between 0 (no agreement) and 1 (complete agreement).

Results

a) Nowadays in Dutch classrooms indoor facilities to play with sand and water are often available, besides clay or dough and other material for sensory play. An important way of learning is to stimulate the senses. Therefore sensory play is included as a distinct observation category. Motor or physical play, construction play and make-believe play contribute to physical, cognitive, emotional and social development. These play forms are clear to distinguish and are therefore included in the instru-

ment. Activities at desk which are usually present in the classroom during play time (or choice time) like drawing, painting, and (board) games with rules are defined as a play category. Sometimes children do not know what to do and wait or watch other playing children. This behaviour is categorised as 'miscellaneous'. And sometimes children are not visible, because they are for example playing in a play house or on the corridor.
Hence the observation instrument consisted of seven categories in total:

1. Sensory play – exploration and play with materials like sand, water, dough, clay.
2. Motor play - fine and gross motor activity like climbing, rough-and tumble, slide.
3. Construction play – constructing or creating with blocks, boxes, boards.
4. Make-believe play – fantasy play with dolls, cars etc. and role-playing.
5. Arts and games – doing arts and crafts, writing, board games, working on the PC or with audio-visual equipment.
6. Miscellaneous – like 'no choice yet', watching or waiting.
7. Not visible – when children are in the corridor, hiding in a play house etc.

The social categories of play were not included in the instrument because this would make the instrument too complex when used for the whole group of children at the same time.
See Appendix for the instrument.

b) Between-observer reliability
Calculated in the statistical software SPSS 16.0 (2010) the between-observer reliability was as follows:

Group 1 (*N*=5): Kendall's W= 0.81 (chi-square= 68.6; df= 17; p=0.000).
Group 2 (*N*=6): Kendall's W= 0.85 (chi-square= 178.3; df= 35; p=0.000).
Group 3 (*N*=6): Kendall's W= 0.89 (chi-square= 187.9; df=35; p=0.000).

According to Siegel and Castellan (1988) the strength of agreement in every group was almost perfect. This means that the observers understood the categories in almost the same way and that the instrument is reliable. The observers found the instrument simple and clearly structured.

Discussion

The objective of the study was to develop an observation instrument on the basis of video recordings. The instrument was established in collaboration with experienced teachers and experts on play. The video recording was analysed by trained students.
With the presented observation instrument it is possible to investigate the play be-

haviour of a group of children in a classroom setting with a good between-observer reliability. The selection of play forms covers the whole range of play behaviours of children aged four to six. The selection of play forms in this instrument is grounded in theories about play and empirical practice. It is not totally in line with, for example, the POS (Rubin, 2001) because in the POS rough-and tumble behaviour is coded as non-play. Also the category of sensory exploration is not often found in observation instruments for the age of four to six. However, from a developmental view, sensory exploration play is not limited to very young children but remains an important source of gathering information about the environment during childhood. It is not possible to compute the internal consistency as a measure of reliability (Cronbach's alpha) of the instrument, due to the expected and resulting negative average covariance between the five forms of play (sensory, motor, construction, make-believe, arts and games). As can be expected, most intercorrelations between the five forms of play are negative. When the number of children that shows a certain form of play increase, the number of children showing one of the other types of play will decrease, because only one form of play at the same time is rated for each child. In a sample of 454 ratings of children playing in 47 classes (mean class size 18.7, minimum 8, maximum 29 children per class) (for more details see Berkhout, Bakkers, Hoekman, & Goorhuis-Brouwer, 2012) we found mainly negative Pearson correlations (ranging from –0.227 to 0.083; mean correlation –0. 111).
The instrument facilitates the observation of playing children. It makes it possible to observe the dynamics of the whole group; for example, after how much time do children change to another play form, or when do they lose interest (i.e. coded in the category of miscellaneous). If some forms of play have prevalence over others, or play is one-sided, the question can be posed why this occurs and whether action has to be taken (when the instrument is used by teachers). Moreover, the use of the instrument can improve observation techniques and provide knowledge about play, especially when a whole team of teachers uses the same instrument and discusses their findings.

Limitations of the observation instrument

A limitation of the instrument is that the category 'arts and games' covers a range of different occupations that are not distinguished. A second limitation is the focus of the camera.

Future research

A qualitative extension of the observation instrument (*how* do the children play) may be a significant addition.

Appendix

Observation instrument

Time of beginning: Note number of children after every 5 minutes
Filled in by:
School: Class: Date:

	Episode 5'	10'	15'	20'	25'	30'	35'	40'	45'
Forms of play	No. of children	No. of children	No. of children	No. of children	No. of children	No. of children	No. of children	No. of children	No. of children
1. Sensory exploration: - With sand, water, materials etc.									
2. Motor play: - Climbing, jumping, rough-and-tumble, etc.									
3. Construction play: - Building with blocks, boxes, etc.									
4. Make-believe play: - Fantasy play with toys, cars, dolls etc. - Role play, disguise									
5. Arts and games: - Drawing - Making things - Games at desk - PC etc.									
6. Miscellaneous: - No choice yet - Watching - Walking around, etc.									
7. Not visible									

Comments:

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4 Observing Free Play in Classrooms with an Instrument based on Video Analysis

Abstract

The aim of this study was to investigate the play behaviour of 877 children aged four to six in 47 classes of different sizes in The Netherlands. Video recordings were captured during choice (free play) time once in each class. The video recordings were analysed by trained bachelor students in education with the help of an observation instrument. In child-initiated play, children showed a variety of play i.e. sensory, motor, construction, make-believe and, arts- and-games that contribute to the physical, emotional, social and cognitive development. Make-believe play and arts-and-games were observed most. A rich playing environment (e.g. sand and water, boxes to climb on) yielded variation in play. The results of this study show that experienced teachers and contextual factors are of importance to provoke a variety in play.

Berkhout, L., Bakkers, H., Hoekman, J., & Goorhuis-Brouwer, S.M. (2012). Observing free play in classrooms with an instrument based on video analysis. *Early Child Development and Care. 2012,* iFirst article, 1-12 DOI:10.1080/03004430.2012.658385

Introduction

Play is an integral part of the development of children, from birth until middle childhood and beyond. From of old, play has been an essential part of the programme of young children in (pre) school. However, nowadays more pressure is laid upon teachers to begin with formal learning as early as possible. In Europe (OECD, 2006) as well as in the United States (Miller & Almon, 2009; Nicolopoulou, 2010) this tendency is observed. As a result, time for playing is diminishing or replaced by other activities. It seems as if the knowledge about the specific developmental benefits of play has been overshadowed by concepts of learning (Goorhuis-Brouwer, 2011). Munn (2010) stated that the tension between the concepts of 'play' and 'learning' is an artefact of the way the discourse about early childhood education is embedded in the societal discourse. In this discourse play is defined as trivial, optional and not assessable opposite to learning that is defined as serious, compulsory and assessable (ibid). In this way, playing and learning are constructed as opposites.
The question could be raised why this sharp discussion about playing and/ or learning is apparent. One of the possible explanations is that advocates of playing are convinced that the benefits of playing are so necessary for young children that it would be a great loss if playing at school would diminish. Especially with respect to psycho-social competencies because these features are developed by pretend play and role playing (Ashiabi, 2007; Göncu, 2002; Johnson, 2006).
Advocates of early learning are convinced that children will acquire more academic skills when they start young. The consequences for psycho-social development are mostly not taken into account, because these do not specifically belong to learning.
To enlighten the gap, more research is needed regarding the implications of early learning and playing for young children. This study aims to contribute to the foregoing discourse by investigating the developmental merits of play and play behaviour in nowadays classrooms. First a short review of the literature about play will be given followed by the description of an explorative empirical study.

Play and developmental benefits

Through play children engage and interact in the world around them (Ginsburg, 2007).
Eight features characterize ordinary play:

Play (1) is pleasurable and enjoyable, (2) has no extrinsic goals, (3) is spontaneous, (4) involves active engagement, (5) is generally all-engrossing, (6) often has

a private reality, (7) is non-literal, and (8) can contain a certain element of make-believe (Hirsh-Pasek, et al., 2009, p. 26).

Developmental psychologists distinguish several forms and stages of play, according to the maturity of physical, emotional, cognitive and social abilities (e.g. Fromberg & Bergen, 2006; Meire, 2007; Rubin, Fein, & Vandenberg, 1983; Singer, Golinkoff, & Hirsh-Pasek, 2006).

Each form of play contributes to specific competencies.

Sensory exploration is the way of very young children to touch, grasp, smell, and taste the environment. By shaking or tickling things, noise and movement are explored. These forms of play are the basis for perception, for looking and listening. In (pre) school sensory exploration is still important because it nourishes the senses by playing with sand, water, paint, dough etc. etc. (Miller & Almon, 2009).

Constructive play consists of manipulating objects for the purpose of constructing or creating something (Smilansky, 1968). Building with blocks or with construction materials requires fine motor activity, insight in space and in the limits and possibilities of the material. Research on constructive play (Ness & Farenga, 2007; Seo & Ginsburg, 2004) demonstrated the benefit of constructive play in developing mathematical skills. Construction play stimulates 'early mathematics' as children experiment with shape, space, measurement and magnitude (Ginsburg, 2006).

Motor play. In motor or physical play, children engage in playful physical movement like climbing, jumping, hop-scotching and rough-and-tumble. Physical play is often related to recess and outdoor play because some space is needed (Fjortoft, 2004; Lindstrand, 2005). It encourages gross and fine motor development, self-reliance, and social competence. Rough-and-tumble play has a distinctive social component and exists of run, chase, flee, wrestle, open hand hit (Pellegrini, 2002). Rough-and-tumble often is confused with aggression, because at some levels they resemble each other. However, aggression is characterised by closed hand hits, shoves, pushes and kicks. Affect is expressed in rough-and-tumble play by smiles or a play face, while aggression is expressed by frowns or crying (ibid). Social cognition is enhanced because children learn to understand what the intentions of the play partners are (Bjorklund & Brown, 1998).

Make-believe play. Also described as symbolic play (Piaget, 1962), fantasy play or pretend play (Landreth, Homeyer, & Morrison, 2006; Lillard, 1993). These terms have a slightly different meaning, depending on the theory from which they are derived. However, they all point to the same characteristic namely that children act 'as if' (as if something is real that is not real) either solitary or with others. In a shared fantasy world children take on social roles and invent complex stories (Hewes, 2007). Imagination and fantasy is an important way of thinking in childhood that cumulates with age (e.g. Lievegoed, 2003; Singer, D. & Singer, J., 2006). Important social and emotional competencies are enhanced by role-playing like experiencing and

expressing emotions, and understanding the emotions of others (Ashiabi, 2007). In addition, social and cognitive skills like negotiation about roles, perspective taking, cooperation and social understanding are developed by playing with other children (Ashiabi, 2007; Bergen, 2002; Miller & Almon, 2009). In classes with children of different ages, children imitate and learn from the more complex play of older children (Gray & Feldman, 1997). According to the socio-cultural theory of Vygotski, self-regulation is fostered by socio-dramatic play. It refers to the ability to act in a deliberate, planned manner in governing emotional and physical behaviour (Berk, Mann, & Ogan, 2006; Bodrova & Leong, 2007).

Social participation and language in play

Parten (1932) defined a hierarchy in social participation in play that is still used in current research e.g. unoccupied behaviour, solitary play, onlooker behaviour, parallel play, associative play, and cooperative play. These forms of participation subsequently become apparent during early childhood development and can be observed in all forms of play.

Language accompanies each form of play and specifically pretend play, either by inner (private) speech, or by talking aloud (Deunk, 2009; McCune-Nicolich, 1981).

Role of the teacher

The role of the teacher with respect to promote free play in the classroom for a great part depends on the perceptions of play and the education and background of the teacher (Ashiabi, 2007). Whether teachers believe that play contributes to development or that other activities are more important, direct their behaviour. In a small scale study, McInnes, Howard, Miles and Crowley (2011) investigated the differences in practitioners' understanding of play and how this influenced the pedagogy. It became apparent that the theoretical knowledge about play was insufficient, the role of the adult unclear and that therefore practitioners tended to adult-led activities. In addition, König (2009) and Howard (2010) reported incongruence between teachers' views about play and their daily practice. However, in the study of Berkhout, Dolk and Goorhuis-Brouwer (2010) teachers described their roles as stimulating, watchful and protective. The teachers tried to shape the conditions for play in a safe context and in a stimulating environment. These teachers shared a commitment to play, had a solid theoretical knowledge and were experienced.

This study

Most studies about play focus on one type of play, like rough-and-tumble or pretend play. In addition, often a slight number of children are included in the research.

In this explorative empirical study we aim to include a large number of children of age four to six to investigate the play behaviour during free play time (choose time)

in nowadays classrooms in the Netherlands. Especially whether a variation in play forms can be observed. We hypothesise that a variety in play fosters the physical, emotional, social and cognitive development of the child. In addition, we expect that in large groups children may choose other play activities than in small groups.
Research questions are:
Which play forms do children aged 4-6 show in nowadays classrooms?
Is group size of influence on play behaviour?

Method

Video recordings were captured by the first author during play (choice) time in 47 school classes (20 schools) with children from four to six years of age. The camera stood on a tripod on a fixed place so that the greatest part of the classroom was visible. The whole period of play time was recorded continuously. Every five minutes a pan was made to collect observations of all the children. The video recordings were analysed by three different groups of trained bachelor students of a teacher education university with the help of the observation instrument (Berkhout, Hoekman, & Goorhuis-Brouwer, 2011). The observation instrument is a time sampling method with which the play behaviour that every child in each class showed was analysed and coded in each subsequent time slot of five minutes. When children changed their play within five minutes, the form of play that was observed longest was counted.
The following types of play were distinguished: sensory play, motor play, construction play, make-believe play, arts and games (activities at desk), and the categories 'miscellaneous' (like no choice yet, onlooker behaviour) and 'not visible' (f.e. hiding in a play house or on the corridor). These seven categories have proven to cover the whole range of play behaviour of children aged four to six in a classroom setting (Berkhout, Hoekman, & Goorhuis-Brouwer, 2011)

Procedure

Eighty-seven elementary schools, spread across the Netherlands, were invited to participate in the study on play in the classroom by children aged four to six. A total of 20 schools (23%) agreed to participate. These schools were situated in various small and middle sized towns (between 28.000 – 170.000 inhabitants) and were situated in a neighbourhood of low-, middle and high social-economical background (Status CBS, 2010). Refusal to take part in the study was mostly due to the work load of teachers, or to a focus on other pedagogical topics in the school or to prior or ongoing participation in another research project.

After commitment of the teachers, a letter was sent to the parents of the participating schools. The parents were asked to give consent for capturing video recordings in the classrooms. The researchers guaranteed that the videos would be used for the research

only. Almost all parents gave informed consent. Parents of two children refused. These children played in another class when the videos were captured.

Participants

In total 877 children aged four to six were included in the research.
The teachers of 47 classes from 20 different schools were qualified (bachelor's degree in education or comparable education) and experienced, 19.6 mean years of experience (SD 9.7; min.1 year, max. 34 years).
The mean number of children in the class was 18.7 (SD 4.6; min. 8, max. 29 children).
87.2% of the classes were heterogeneous (age 4-6 together). 12.8% of the classes were homogeneous (age 4 apart, ages 5-6 together). The mean playing time was 48.66 minutes (SD 11.54; min 20', max. 60').

Background information

At age four, Dutch elementary school is comparable with foundation stage in Great Britain, and Kindergarten in Europe and the USA. From age five (mandatory school age) and beyond, Dutch elementary school is comparable with elementary school (Europe, UK) and grade 1 (USA). In the Netherlands children start to attend elementary school at the age of four, from the age of five attending school is mandatory. A curriculum for children of 4 -12 years of age is prescribed by the government. In this curriculum the essential aims for each subject are prescribed. There is some space for schools to follow their own pedagogy provided that the essential aims are fulfilled. The participating schools in this study represent a variety of pedagogical views, resulting in slightly different daily programmes. In the curriculum play based activities as well as academic skills are included.
In every school there is free play/ choice time every day and also outdoor recess. The classrooms are about 90-110 square meters. In the classrooms there are some house-like corners, with dolls, pots and pans and other equipment. Construction materials, both small (blocks) and big (boards, packing cases) are present. Requisites for fantasy play, likes dresses, caps and capes to disguise are available. Children are allowed to play on the corridors and sometimes also to unfold some gross motor activity, like climbing on boxes or sliding from boards. Materials for arts and crafts, writing and reading, and sometimes audio-visual equipment to play games or listen to music are available. Frequently, there are boxes with sand or water in the class or in the corridors. In some classes a limited number of children is allowed to play in each area, both in the classroom and in the corridors. In these classes children are allowed to change activities during play time, provided that the maximum of children in a designated area is not exceeded.
The role of the teachers is to offer a rich playing environment with several differ-

ent themes according to the season – for example in spring a shop-like place with self-made flowers, or in winter clothes to disguise as a snowman. The children may engage the teachers in role playing as a nurse or a friend who will have tea with them.

Statistics

a. The 47 video recordings were analysed by trained bachelor students with the help of the observation instrument as described in Berkhout, Hoekman and Goorhuis-Brouwer (2011). The mean percentages of children that show a distinct form of play in each time slot of five minutes was calculated in SPSS (2009).
b. ANOVA (Analysis of Variance) and Bonferroni post hoc multiple comparisons tests were used to compare the play behaviour between groups of different class sizes.

Results

a. The analysis of the 47 video recordings is shown in table 1. All forms of play were observed, make-believe play and 'arts and games' were observed most.

Table 1 Mean percentages of play forms by time slots of five minutes

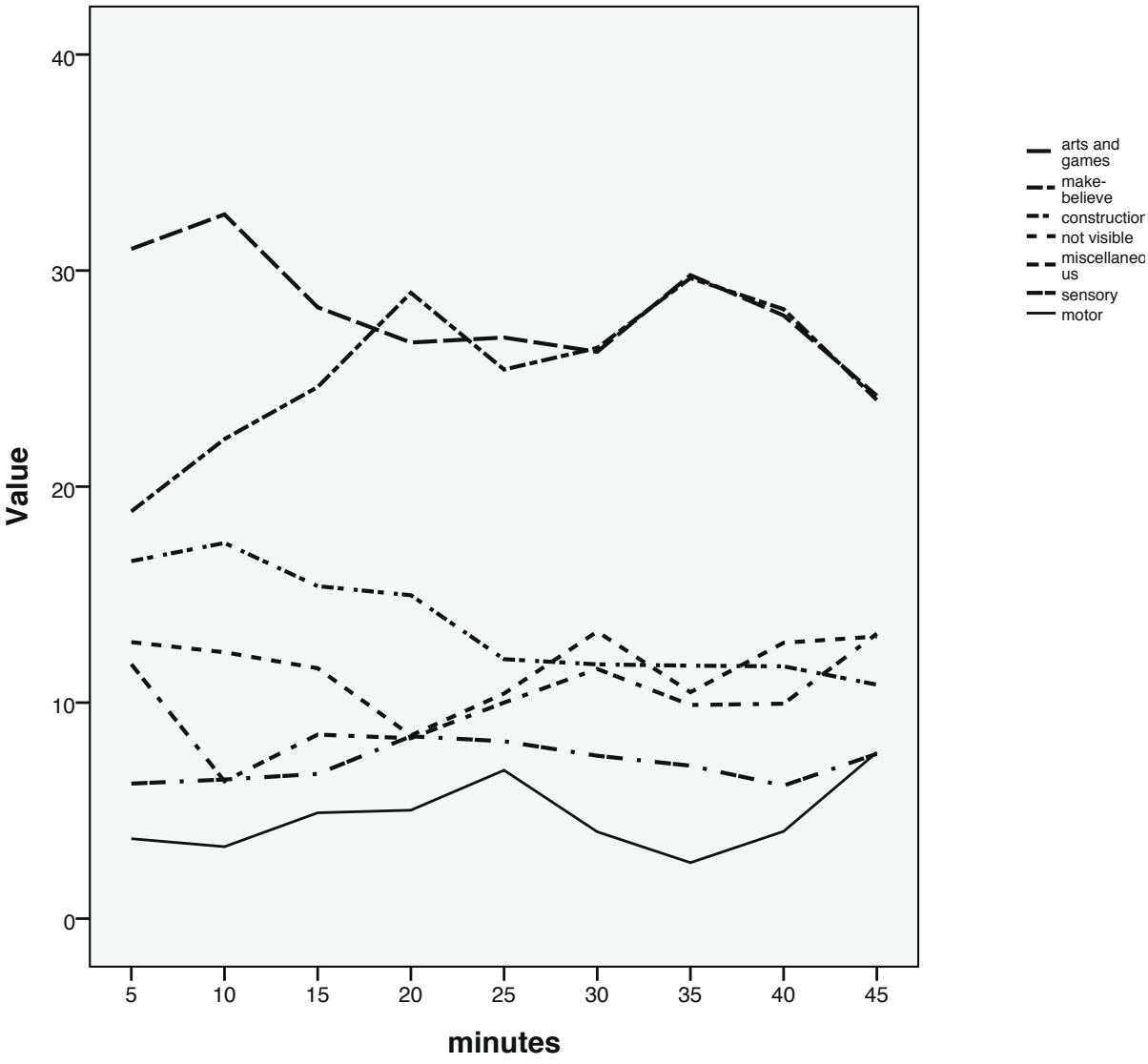
	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
Sensory	6.25	6.44	6.69	8.44	8.21	7.5	7.1	6.16	7.6	6.03
Motor	3.7	3.3	4.9	5.01	6.9	4.0	2.6	4.0	7.7	9.6
Construction	16.5	17.4	15.4	14.97	12.0	11.8	11.7	11.7	10.8	11.95
Make-believe	18.8	22.2	24.6	29.0	25.4	26.4	29.7	28.2	24.0	26.7
Arts and games	31.0	32.6	28.3	26.7	26.9	26.2	29.8	27.9	24.2	20.1
Miscellaneous	11.8	6.4	8.5	8.3	10	11.5	9.9	9.95	13.1	11.4
Not visible	12.8	12.3	11.6	8.5	10.4	13.3	10.5	12.8	13.1	14.7

Note: Value = the mean percentage of children that show a specified form of play

In Figure 1 the different courses of play behaviour in each of the seven categories is displayed. There is a constant 'wave' within the distinct categories, with some rising and decline due to changes in play behaviour.

At the start of play time, arts-and-games were observed most. From five to ten minutes the participation increased and then decreased. The course of make-believe play

Figure 1. The course of play forms in classes (N=47)



was quite different. Make-believe play increased from the start of play time with a peak after twenty minutes- apparently it took some time to engage in this kind of play- and with a small decline the participation stayed at the highest level together with arts-and-games. Construction play and sensory play had a smooth course. Motor play showed some variation with a peak at 25 minutes. In the 35th minute there was a decline in motor play while at the same time there was a peak in make-

believe play, arts-and- games and in the category 'not visible'.
The category 'miscellaneous' (like no choice yet, onlooker behaviour etc.) starts relatively high but within ten minutes children have made their choice and are playing. Towards the end of play time this category increased, obviously connected to a decrease of other play categories.

b. To answer the research question whether group size matters with respect to play behaviour, a division was made into three groups. Group I: classes with a small group size (< 16) in total 14 classes. Group II: classes with a medium group size (16-21) in total 19 classes. Group III: classes with a large group size (>21) in total 14 classes. The play behaviour between groups I, II and III was compared and calculated. No significant differences were found with respect to sensory play, construction play and the category miscellaneous. Significant differences were found in the other categories as following:
Motor play in time slot 5 (20-25 min.) between groups I and II: Mean Difference= 9.24 percentage of children; p=0.04; and between groups I and III: MD=10.79 percentage of children; p=0.03. In time slot 9 (40-45 min.) between groups I and III: MD=16.7 prct.of children; p=0.01. Thus in two time slots more motor play was observed in small groups.
Make-believe play in time slot 7 (30-35 min.) between groups I and III: MD= 19.32 prct. of children; p=0.01. More make believe play was observed in small groups
Arts and Games in time slot 5 (20-25 min.) between groups I and III: MD= -17.46 prct. of children; p=0.20. In large groups more arts and games were observed.
Not visible in time slot 7 (30-35 min.) between groups I and III: MD= -13.04 prct. of children; p=0.02. More children were not visible in large groups
Although significant variances were found, these only were observed in time slots 5, 7 and 9.

Conclusion and Discussion

The aim of the research was to observe the variety in forms of play of 877 children during playtime in 47 classes in 20 different schools and to investigate whether group size is of influence on play behaviour.
In the classes all five different forms of play behaviour were observed during the entire playing time. Apparently children have chosen a variety in activities by themselves. In this way they exercised different competencies thus enhancing the physical, emotional, social and cognitive development. Children could change to different forms of play and in a natural flow most children alternated with diverse playing opportunities.
Make-believe play was observed frequently during the entire free play time. This result is consistent with the literature about this most complex form of play that is typical for ages four to six in which important emotional, social and cognitive competencies are learned. In addition, arts-and-games was observed often. The divergence in activities within this category – painting and drawing, fancy-work, working with audio-visual equipment, board games etc. – caused that occupation as well as play were ascribed to this category.
Sand and water boxes were available as an integrated part of the learning environment, thus yielding sensory play. During motor play children constructed boards to slide from and put together boxes to climb on. Apparently these materials were available and children were allowed to this form of play. Construction play was constantly at present, thus providing the opportunity to create something and to exercise with shape, space, measurement and magnitude.

We expected that group size would be of influence on play behaviour. Significant differences were found between small and large groups; in small groups more motor play and make-believe play was found than in large groups. More arts-and-games were found in large groups and more children were not visible. However, these differences were only found in three time slots.
More important than group size may be the fact that the greatest part of the classes was heterogeneous (i.e. ages four to six together). According to the literature, this fact may contribute to the variety in play, especially with respect to make-believe play.

The teachers in the participating schools were experienced teachers. Therefore it could be expected that a diversity of child-initiated play was observed. However, research

is needed in schools where less time is spent on playing. The expectation is that when less time is spent on playing, less emotional, social and cognitive competencies are exercised in a natural way.
In addition, further research with respect to the knowledge about play among young, modern teachers is necessary.
Furthermore, the videos that have been captured yield an abundance of rich material. In a following research the observation instrument could be extended by a qualitative section to observe not only what children play but also how children play in more detail.

Limitations

Although the use of video has many advantages to capture the behaviour of a whole group of playing children, there is a limitation to the sole viewpoint of the camera even when a pan is made every five minutes.

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5 Playing at Home and psycho-social health of four-year-old boys and girls

Abstract

In this study play activities at home are investigated in relation to the psycho-social health of four-year-old boys and girls as reported by the parents. Parents of 224 children filled out a questionnaire about play behaviour of their four-year-old boys and girls at home. The psycho-social health of the children was assessed with the Child Behavior Checklist 1 ½ -5 year. Gender differences became apparent. Boys engaged in significantly more motor play and construction play than girls. Girls engaged in significantly more pretend play and creative play activities. The play quality, concentration and duration of play was predominantly good. Psycho-social problems were absent in 95% of the girls and 97% of the boys. Girls with a (sub)clinical score on externalising problems played less together with peers and the play quality was lower. Unexpectedly, boys with a (sub) clinical score on Total problems played together with others more often. This may be explained by the kind of activities (motor play and construction play) which yields less verbal interaction than for instance pretend play. Both fathers and mothers played with their children.

Conclusion. Gender and psycho-social health influence play behaviour. More research about the specific contributions of play in relation to gender is needed.

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Introduction

Playing at home seems to be a normal daily activity of young children. However, in a report of the American Society of Pediatrics (Ginsburg and Committees, 2006) it is stated that there is lack of time for free play at home within families in the United States nowadays. In the Netherlands, young children are often used to a scheduled lifestyle and lack of time for free play is reported also. Ginsburg et al. (2006) point to the problem that even young children have to do homework to improve academic skills. Moreover, children are often in day-care, indicating that time for parents to play with their children becomes scarce. In addition, a hurried lifestyle in many families provokes stress in parents and children and diminishes free play. Therefore paediatricians in the afore mentioned report, plead to give more attention to free play, at home as well as at school, to foster psycho-social health. In addition, the importance of play for the interaction between parent and child is emphasised.

Role of the parent

Parent-child play has implications for the developing gender role of the child (Lindsey & Mize, 2001; Paquette, 2004; Tamis-LeMonda, 2004). Lindsey and Mize (2001) observed the parent-child play of pre-school children (middle- and upper-middle-class families) within two different contexts, one of physical play and one of pretend play. The researchers found that dyads of father-son were more engaged in physical play, whereas mother-daughter dyads were more engaged in pretend play. Differences between fathers and mothers are not only apparent in style of playing but also in style of parenting (Roggman, 2004). Mcbride and Mills (1993) found that, when parents were involved with their children, mothers were more involved with child-rearing activities with their 3-5 year- olds while fathers spent more time on playing. According to Paquette (2004), fathers are supposed to open the world for their children by activating play and providing arousal, while mothers tend to a protective way of playing. Tamis-LeMonda (2004) argued that this two- way model of Paquette may be too narrow although it contributes to theory about fathering. That fathers engage more in rough-and-tumble play relative to mothers is well-documented (Tamis-LeMonda, 2004). However, Italian and Swedish mothers for example, do engage in rough-and-tumble play as well (Roopnarine & Krishnakumar, 2006). Thus, differences between cultures have to be taken into account.

Play activities

Play activities are connected to children's ages and abilities. With time, the playful interaction between parent and child changes - from baby like face-to-face play (touching, patting, hugging, singing etc.) to a wide variety of play forms like rough-and tumble play, pretend play, games with rules, sports and sedentary activities like drawing etc. (Rubin, Fein & Vandenberg, 1983; Lillard, 2006; Pellegrini, 2006).

Playing together

Playing together, require emotional and social skills. In role-playing, children can express emotions but they also learn to regulate aggressive behaviour and practise perspective taking, problem solving and other important social skills (Ashiabi, 2007). Comparable social-emotional competencies are found in rough-and-tumble play (Pellegrini, 2006) and pretend play (Göncü, Patt, & Kouba, 2002). The quality of play, the concentration while playing, and the duration of sequences of play, represent emotional competencies that normally develop with age (Van der Pol, 2005).

Gender

Playing in same- (girl-girl), other- (girl - boy) or mixed (girl- girls and boys) peer groups has implications for the style of playing (Fabes, Martin, & Hanish, 2003). Gender differences in play behaviour can be observed in the kind of speech that is used in interactions between boys and girls (Göncü et al., 2002). In other research studies it was found that boys tend to engage in more physical play whereas girls tend to engage in more verbal play (e.g. Leaper, 2011). Explanations of why these differences are found have changed over time, following new research results (Leaper, 2011). In the 1970's, the parent-child relationship (role-model of the parents) and the different treatment of boys and girls was held responsible for gender differences. In contemporary studies transactional processes are emphasised in which parent and child influence each other (Maccoby, 2000). Moreover, friendship with peers andhaving brothers and sisters are seen as important aspects of gender development (Rubin, Bukowski, & Parker, 2006). In addition, biological and cognitive factors (e.g. self-concept in relation to same-sex peers) are stated as mediators in developing gender. Likewise contextual factors like teachers, other adults and the media play a role as well (Leaper, 2011).

Furthermore, gender in relation to play is studied in different situations. For example, Ensor, Hart, Jacobs and Hughes (2011) observed the behaviour of six-year-olds in a competitive board game with a same-gender friend. The aim was to explore differences between boys and girls with respect to aggression, disruption, arousal and negativity. Teachers assessed the strengths and difficulties of the children. It was found that the association between the latent factor (of multiple-groups confirmatory factor analyses) and teachers' ratings of total difficulties was significantly stronger for

boys than for girls. However, it may be that the competitive setting may specifically appeal and provoke certain behaviour in boys whilst girls may react in another way.

This research

Playing at home is a scarcely studied subject in the research on play. Moreover, little is researched about differences and similarities between the play behaviour of boys and girls in the family situation with or without siblings and peers. In addition, the quality of playing at home has not been given much attention, up until now.

The aim of the current research is to investigate play behaviour at home in relation to the psycho-social health of four-year-old children as reported by the parents.
This study may contribute to a better understanding of play behaviour of boys and girls at home.

Research questions:
1. How do four-year-old children play at home and are there differences between boys and girls?
2. How do boys and girls play with respect to quality, concentration and duration?
3. What is the relation between psycho-social development and play forms, overall play quality and playing together, both with peers and parents?

Method

Participants

In total 224 four-year old children were included in the research, 123 girls (55%) and 101 boys (45%). The average age was 51.7 months; SD 3.1 (min 46, max. 62month). The number of siblings was: 14% only child, 55% one sibling, 24% two siblings, 5% three siblings and 1% of the children had four or more siblings.
The family status was as follows: 87% two parent households, 8% divorced, 2 % other family status, missing 3%. The educational level of the parents was as follows: Mothers: university/ university college 42%, vocational training 38 %, other 7 %, missing 13%. Fathers: university/ university college 43 %, vocational training 37 %, other 4%, missing 16%.

Procedure

A total of 20 elementary schools, spread across the Netherlands, agreed to participate in an extended study in which the psycho-social development of children in relation to play was investigated (for more details about recruitment of the schools see Berkhout, Hoekman, & Goorhuis-Brouwer, 2011a; 2011b). The schools were situ-

ated in neighbourhoods of mixed social-economic status. The parents of four-year old children starting elementary school agreed to fill out a questionnaire about the psycho-social development and a questionnaire about play behaviour at home.

Instruments

To assess the psycho-social behaviour of the children, the Dutch translation (Verhulst & Van der Ende, 1997) of the Child Behavior Checklist 1 ½ - 5 (CBCL, Achenbach & Rescorla, 2000) has been used. The American version of the CBCL is judged reliable and valid (Achenbach & Rescorla, 2000). With this questionnaire standardised information can be gathered about the emotional and behavioural problems of the child. Each questionnaire consists of 100 items. Parents score whether the behaviour of the child during the two months prior to the completion of the questionnaire corresponds to the items and in what way. A score of 0, 1 or 2 is ascribed when the behaviour is respectively not observed, observed a little or sometimes, or is clearly/ often observed. With respect to the total of 100 items, two broad band syndromes are distinguished: items that are characteristic for internalising problems and items that represent externalising problems. Internalising problems include anxious and withdrawn behaviour as well as emotional reactive and somatic complaints. Examples of items are: "the child clings to adults and is too dependent". "The child does not answer when others talk to him/her". "The child has somatic complaints like headaches, nausea and stomach aches". Externalising problems are attention problems and aggressive behaviour. When a child is not able to concentrate, has difficulty with directions or wanders away this behaviour points to attention problems. Examples of aggressive behaviour are: "the child is defiant', "the child destroys other children's belongings" and "the child is disobedient". The CBCL was filled out by the parents within three months from when the 4-year-olds had started attending elementary school.

The questionnaire about play behaviour was adapted from the questionnaire of Van der Pol (2005). The questionnaire consisted of general questions about date of birth, sex, family status, number of brothers and sisters. Furthermore, in part A questions were posed about the kind of play the target child showed over the three months prior to the completion of the questionnaire. The kind of play was distinguished in six observation categories: motor play (including rough-and- tumble), make-believe play, construction play, board games and games with rules, educational games, and creative activity (arts and crafts, music). On a four point scale parents could rate whether the behaviour was observed respectively almost never, sometimes, often or almost always and whether the play activities were according to age, partially according to age or unknown. In addition, it was asked how much time was spent daily on watching TV or on activities on the PC. In Part B questions were posed about the quality of play (bad, moderate, good), about the concentration while playing (not, rather, good)

and about the duration of playing (short, rather long, very long). Furthermore there were questions about playing alone, together with peers, older or younger children or with children of mixed age and about the gender of play mates. And whether the target child played with brothers and/or sisters, mother and /or father.

Statistical analysis

By means of the computer programme (ADM, 2000) that is used in association with the CBCL the *T* values were calculated on the internalising, externalising and total problem scales. *T* values from 0 through 59 are in the normal range, from 60 through 63 are in the sub clinical range and from 64 through 100 are in the clinical range.
The Paired-Samples T-test (in statistical programme SPSS 19), was used to calculate the differences between boys and girls in the choice of play categories.
The non-parametric Mann- Whitney U test (in SPSS 19) was used to compare the scores in the normal range and the (sub) clinical range on the scales of the CBCL with respect to play categories, playing together, and overall play quality for girls and boys respectively.
Correlations between play activities and play quality respectively and raw scores on the (sub)scales of the CBCL have been calculated (in SPSS 19) with Spearman's Rho.

Results

Gender

Significant differences between boys and girls were found. Boys showed significantly more motor play, construction play and educational play than girls, and girls showed significantly more make-believe play and creative activity. See table 1.

Table 1 Play activities Independent samples T-test. Girls–Boys (N=224)

Play activities	t- value	df	significance	mean difference
Motor play	-2.03	222	.04*	-.16
Make-believe play	3.00	222	.00**	.27
Construction play	-5.12	222	.00**	-.51
Play with rules/ round games	.74	221	.46	.07
Educational play	-.44	222	.66	.04
Creative activity	6.73	222	.00**	.54
TV/ PC	.71	222	.48	.06

* $p \leq .05$; ** $p \leq .01$

Play quality

The overall play quality was assessed by the parents. It became apparent that most children (90 %) played well, that 50.7 % of the children concentrated rather well and 43.5% concentrated well. As for the duration of play, 71.9% of the children played rather long. See table 2.

Table 2 *Overall play quality in percentage (N=224)*

Play quality			**Concentration**			**Duration of play**		
Bad	Moderate	Good	Not	Rather	Good	Short	Rather long	Very long
0.9	9.0	90.1	5.8	50.7	43.5	13.8	71.9	14.3

Psycho-social health

The greater part of the children were healthy, problems were absent among 95 % of the girls and 97% of the boys. See table 3.

Table 3 *Percentage of girls and boys with scores in normal and (sub)clinical range*

	Internalising		**Externalising**		**Total**	
	normal	(sub) clinical	normal	(sub) clinical	normal	(sub) clinical
Girls % (N=123)	89.4	10.6	95.1	4.9	95.1	4.9
Boys % (N= 101)	91.1	8.9	96.0	4.0	97.0	3.0

Play activities

Play was according to age in 96% and partially according to age in 3% of the children.

All children showed a variety in play activities. No significant differences were found between the group of children with a score in the normal range and the (sub)clinical range on the internalising, externalising and total problem scale with respect to the play activities (motor- , make-believe play, etc.). This implies that girls and boys with or without a (sub) clinical score showed no differences in observed play activities.

Overall play quality

Almost no significant correlations between the (sub)scales of the CBCL and overall play quality were found. Only among girls with a (sub)score on the externalising scale, the overall play quality was significantly lower (p= .043) than among girls with a score in the normal range.

Among girls, a moderately high but significant correlation (r_s= -.32; p= .000) was

found between the subscale of attention problems and overall play quality. This implies that when more attention problems were assessed, the playing was less well, less concentrated and less long.

Playing together with peers and parents

Girls with a (sub)clinical score on the externalising scale played significantly (p= .039) less together with peers than girls with a score in the normal range. Boys with a (sub) clinical score on the total problem scale played significantly (p= .023) more often together than boys with a score in the normal range.

No other significant differences between boys and girls in playing together with peers, siblings or parents have been found.

The frequency of playing with father was reported as follows: almost never among 6.7% of the children, sometimes 65.6%, often 23.2%, missing 4.5%. The frequency of playing with mother was reported as almost never among 2.2% of the children, sometimes 64.3%, often 33.2%, missing 0.9%. Significant correlation (r_s=.64; p=.000) was found between playing with father and playing with mother, indicating that when play between father and child was reported almost always playing with mother was reported as well.

Discussion

The aim of this research study was to investigate the play behaviour at home in relation to the psycho-social health of four-year-old boys and girls as reported by the parents.

It was found that boys engaged in significantly more motor play and construction play than girls. Girls engaged in significantly more pretend play and creative play activities than boys, according to the parents. This finding is in line with studies about gender differences (e.g. Leaper, 2011) and seems to point to an important issue; if boys prefer motor play, do they get the possibilities at home and at school? Motor play requires space inside and outside and some tolerance of the adults with respect to movement and noise. However, in current discussions about the behaviour of boys it is often mentioned that boys have to adapt to feminine standards which implies a preference for the use of verbal interaction (Geerdink, Bergen, & Dekkers, 2004). In the Netherlands there is currently a shortage of male teachers in elementary school and therefore a policy of encouraging more men to become teachers has become apparent. Recently, some men have been interviewed (NRC, 2011) about their choice of becoming a teacher in elementary school. Their main considerations were to facilitate motor play for boys and to present a male role model.

In this research corresponding percentages and significant correlation with respect to father-child and mother-child play were found. These results are in line with find-

ings of research done in several developed countries (Roopnarine & Krishnakumar, 2006). We may conclude that there are positive conditions for the children in the research group with respect to gender role development.
The psycho-social health of the four-year-olds was assessed by the parents. Almost all children are healthy, problems were absent among 95 % of the girls and 97% of the boys.
Problems on the total scale were found among 4.9% of the girls and among 3.0% of the boys This result is low in comparison to epidemiological studies in which in 9.4% of the cases one or more problems were found (Reijneveld, Brugman, Verhulst, & Verloove-Vanhorick, 2004). One explanation may be that the educational level of the parents in this research is on average middle to high and that the children live for the greater part in two-parent families. These factors are protective for mental health (Asscher & Paulussen-Hoogenboom, 2005). In addition, the children showed a variety in play activities which also contributes to psycho-social health.

In our study we found that boys with a (sub)clinical score on the total problem scale played together with others more often than boys with a score in the normal range. This (unexpected) finding may be explained by a gender specific way of playing. All the boys in the research group showed more motor play and construction play which needs less verbal interaction than pretend play. Therefore, also the boys with a (sub) clinical score may be involved in this kind of play because it may appeal to 'normal' behaviour. Recently it was stated that boys' physical/motor play which a few decades ago was experienced as quite normal, is nowadays often labelled as problem behaviour (Crott, 2011).
The girls of the research sample showed more pretend play and creative activity. The (sub) clinical score of some of the girls was in the externalising problem range, thus these girls may have more problems with consulting and playing together with others. In addition, the overall play quality of girls with a (sub) clinical score on the scale of attention problems was lower than the overall play quality of girls with a normal score. Attention problems are considered as affecting the concentration and duration of playing.

This study relies on the observations and assessment of parents. However, there are some limitations to this way of research because it could be expected that parents have different frameworks of reference. In a follow-up study the assessments of parents could be supplemented by observations at home.
In addition, more research is not only needed with regard to the contribution of play in relation to gender, but also with respect to opinions about play behaviour of boys and girls.

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6 Psycho-social Health of four-year-old boys and girls, as observed by parents and teachers

Abstract

Both parents and teachers assessed the psycho-social health of 228 four-year old children at the start of elementary school in the Netherlands. Assessments have been conducted using the Child Behavior Checklist (CBCL ages 1 ½ - 5) and the Caregiver-Teacher Report Form (C-TRF ages 1½ - 5). Results were compared to epidemiological studies with respect to informants, instruments, gender and age of the children. Most children in this study were thriving. The percentage of children without problems varied from 88 % to 98%. The difference depended on the informant (parent or teacher) and the gender. Teachers recognised significantly more externalising problems among girls and anxious/depressed problems among boys and girls. Parents reported more somatic complaints among girls. The problems identified by parents and teachers did not predominantly concern the same children. This has to be taken into account in the case of screening on psycho-social problems.

Berkhout, L., Hoekman, J., & Goorhuis-Brouwer, S.M. (2012). Psychosocial health of four-year-old boys and girls, as observed by parents and teachers. *European Journal of Developmental Psychology, 2012, 1-8. iFirst article***.** DOI:10.1080/17405629.2012.662590

Introduction

When researchers aim to compare results of psycho-social research with findings of national epidemiological studies, some difficulties emerge. Firstly, differing results have been reported with respect to the prevalence of psycho-social problems (e.g. Brugman, Reijneveld, Verhulst, & Verloove-Vanhorick, 2001; Ford, Goodman & Meltzer, 2003; Hölling, Erhart, Ravens-Sieberer & Schlack, 2007; Ihle & Esser, 2002). Secondly, research studies have been aimed at different age groups, often with a wide divergence between the ages. Thirdly, several different measurement instruments have been used and parents and teachers (caregivers) were not always both included as informants in the research studies. Lastly, not all research studies make gender related distinctions with regard to the prevalence of psycho-social problems. See scheme 1 for a comparison of epidemiological studies from the Netherlands, Germany, and Great Britain.

Scheme 1 *Review of studies about the prevalence of psychosocial problems*

Authors Sample size	**Informants**	**Instruments**	**Age group**	**Psycho-social problems**
Brugman et al., 2001 N = 4480	Child Health Professionals (CHP's)	Questionnaire CHP	5 – 15 years	25 % One or more psycho-social problems
	Parents	Child Behavior Checklist (CBCL, 4-18 jr.)		
Zeijl et al., 2005 CHP's N= 4557 Parents N= 3970	CHP's	Questionnaire CHP	0-12 years 0-4 years 5-6 years	6% - 15% one serious problem
	Parents	Infant Toddler Social and Emotional Assessment (ITSEA)		
		Child Behavior Checklist (CBCL, 4-18 jr.)		
Reijneveld et al., 2004 N= 2229	CHP's	Questionnaire CHP	1, 75 – 4 years	9.4 % one or more problems 6.3 % clinical score
	Parents	Child Behavior Checklist (CBCL 2-3 jr)		
Hölling et al., 2007 N= 14,478	Parents Teachers	Strength and difficulties questionnaire (SDQ)	0-17 years divided in: 3-6 years 7-12 years 13-17 years	Girls (3-6 years): Sub-clinical 7 % Clinical 4 % Boys (3-6 years): Sub-clinical 9 % Clinical 7 %
Furniss et al., 2006 N= 1887	Parents	Child Behavior Checklist (CBCL 4-18 years)	six- year -olds	12. 4 % psycho-social problems.
Ford et al., 2003 N=10,438	Parents, teachers, children	Development and Wellbeing Assessment (DAWA)	5 – 15 years	prevalence of DSM-IV disorders 9.6 %

In general, problem behaviour is distinguished by externalising problems (aggression, inattentiveness) and internalising problems (anxious, withdrawn, and depressed). Problem behaviour as well as co-morbidity of internalising and externalising problems influence the well-being of the child and show unfavourable courses in the developmental process (Ihle & Esser, 2002). The consequences of internalising and externalising problem behaviour in a classroom setting obviously differ: aggression to peers and teachers commands much attention and disturbs the classroom climate, while anxious, depressed or withdrawn behaviour often goes unmarked. However, precursors of depression can already be observed during pre-school age (Luby et al., 2009).

The onset and pathways of externalising and internalising problems differ considerably between boys and girls as well as the prevalence of psycho-social problems (Brugman et al., 2001; Ihle & Esser, 2002; Reijneveld et al., 2001; Zeijl et al., 2005) Teachers play an important role in the accurate observation of the onset, nature and duration of emotional and behavioural problems in order to prevent, cure or find help for these problems. In addition, parents are important informants.

The assessments of parents and teachers may differ considerably. Dwyer, Nicholson, & Battistutta (2006) reported that there was significantly less agreement between parents and teachers with respect to internalising problems than with respect to externalising problems. This is in line with the meta-analysis of Achenbach, McConaugh, and Howell (1987) who found higher parent-teacher correlations with respect to externalising problems (r = .41) than with respect to internalising problems (r = .32). Moreover, between the ratings of different types of informants (i.e. parents and teachers) an average correspondence of r =.27 was found, whereas the correspondence between the same type of informants (i.e. teachers and aides) was r = .60. According to Achenbach et al. (1987) the different perspectives of parents and teachers and the experiences with children in diverging situations add unique information to the behavioural problems.

This research

The aim of this empirical study is to research: 1) the prevalence of psycho-social problems among 4-year-old boys and girls at the start of elementary school 2) differences between assessments of parents and teachers 3) whether identified problems do apply

to the same children 4) specific types of problems. The findings will be compared with epidemiological studies.

Method

Participants

A total of 20 schools, situated in various towns (between 28.000 – 170.000 inhabitants) participated in the research. Teachers and parents agreed to fill out questionnaires about the psycho-social development. Informed consent was obtained.
In total 228 children were included , 129 (56%) girls and 99 (45%) boys. Mean age 51.8 months; SD 3.0 (min.39, max.62 months). The teachers were qualified and experienced (M =19.6; Sd 9.7).

Instruments

The Dutch translation (Verhulst & Van der Ende, 1997) of the Child Behavior Checklist 1 ½ - 5 (CBCL) and the Caregiver-Teacher Report Form 1 ½ -5 (C-TRF), have been used. These instruments are judged reliable and valid (Achenbach & Rescorla, 2000). The questionnaires were filled out by the parents and teachers within three months after the 4-year-olds had started attending elementary school.

Statistical analysis

The *T* values on the internalising, externalising and total problem scales were computed in ADM (2000). Differences in the scores between parents and teachers were calculated with
the Paired-Samples T-test ((SPSS 16, 2007). The cross- informant agreement across all scales of the CBCLC-TRF was calculated with the correlation measure Pearson's r and with Cohen's Kappa, using VassarStats (Lowry, 2011).

Results

1. No problems were found with 88% - 98% of the children. The percentage of children for whom the scores were in the sub-clinical range or in the clinical range varied according to gender and informant (parent or teacher).

2. Between parents and teachers significant differences were found in the assessments with respect to boys and girls. Externalising and total problems among girls were significantly more often identified by teachers than by parents (Externalising p=0.00; Total p=0.008). Total problems among boys were also significantly more often identified by teachers than by parents (Total p=0.008)

3. The scores of the assessments by the parents and teachers of the same children were

individually compared. When a score in the (sub) clinical range was ascribed to the same child, the following results appeared (table 1)

Table 1 *Number of children with a (sub) clinical score on three scales, agreement of parents and teachers*

	Parents	**Teachers**	**Agreement**	**Perct.of agreement**	**Kappa**
Internalising	26	16	6	16	0.22
Externalising	11	13	2	9.9	0.12
Total	11	17	4	16.6	0.22

The mean r of the cross-informant correlation across all subscales of the C-TRF-CBCL was 0.34 (min. 0.15 – max. 0.68). All r's were low, but significant. Mean kappa was 0.19 which is low according to Lowry (2011) and Ciccetti and Sparrow (1981).

4. Teachers identified anxious/depressed complaints among boys and girls significantly more often than parents. Teachers identified attention problems among girls significantly more often than parents. Parents more frequently reported somatic complaints (table 2).

Table 2 *Differences between scores on six sub-scales according to parents and teachers with respect to girls and boys (Paired Samples t- test: C-TRF - CBCL)*

Girls (N=129)	Mean	t	significance
Emotionally reactive	-1.12	-1.73	0.09
Anxious/ depressed	0.87	2.33	0.02*
Somatic complaints	-1.54	-2.72	0.01*
Withdrawn	-0.62	-1.31	0.19
Attention problems	0.77	1.97	0.05*
Aggressive behaviour	0.75	1.53	0.13

* $p \leq .05$; ** $p \leq .01$

Boys (N=99)	Mean	t	significance
Emotionally reactive	0.30	0.50	0.62
Anxious/ depressed	0.96	3.75	0.00**
Somatic complaints	-0.49	-0.78	0.44
Withdrawn	0.36	0.67	0.50
Attention problems	0.68	1.50	0.14
Aggressive behaviour	0.22	0.46	0.64

* $p \leq .05$; ** $p \leq .01$

Discussion

1. With regard to the prevalence of psycho-social problems among boys and girls, the conclusion is that most children are flourishing. Parents reported total problems in the (sub) clinical range among 6% of the girls and among 3 % of the boys and the teachers reported total problems in the (sub) clinical range among 8% of the girls and among 7% of the boys. Compared with the study of Hölling et al. (2007) the problem rates in our study are lower. An explanation for this may be the educational level of the parents and the family situation which both point to a rather low risk research group.

2. In general, teachers more often reported problem behaviour than parents. This result is in line with Dwyer, Nicholson, & Battistutta (2006) and Achenbach, McConaugh, and Howell (1987). A possible explanation may be that in a classroom setting, externalising behaviour problems are more difficult to handle than other problems and therefore are observed more often. In addition, teachers may compare the behaviour of the four-year-old children with other children in their class while parents may compare the behaviour of their child with siblings or peers.

3. This study reveals that the assessed problems by parents and teachers for the greater part did not concern the same children. The mean cross- informant agreement in our study across all scales was 0.34 (min. 0.15 – max. 0.68); Kappa 0.19. This result is in the same range but slightly lower than the mean cross-informant agreement of 0.40 (min. 0.21 – max. 0.58) of the CBCL and the C-TRF according to Achenbach and Rescorla (2000, p.77). A possible explanation may be that the C-TRF is filled out shortly after the children started attending elementary school. Possibly the children had difficulties with the adjustment to the new situation. The children could also behave differently at school than at home.

4. Teachers more frequently than parents recognised anxious/ depressed complaints among boys as well as among girls. This finding is in line with Hölling et al. (2007) but is rather new in comparison to research alluding specifically to externalising problems in boys. The anxious/ depressed complaints of both boys and girls may have to do with difficulties with the school start.
Besides somatic complaints attention problems in girls were also noted. A clear distinction between the behaviour of girls and boys became apparent which raises the

question as to whether these differences in reaction consolidate or change over time and what consequences this yields for the behaviour at school. These results illustrate the need for more research in this realm.

Limitations of the study

The results of our study will have to be interpreted with caution because schools with a great number of non-Dutch speaking families have not been included in the research group due to decline of the schools to take part in the research.

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7 Psychosocial Health and Life-events.

Dynamic development in the short term. A follow-up study of children at four and six years of age.

Abstract

In this paper, (1) the psycho-social health in relation to (2) life-events was assessed among 156 children attending 20 schools by parents and teachers with the Child Behavior Checklist and the Caregiver-Teacher Report Form at the ages of four and six. Life-events were reported by parents. (1) According to the report, 93% -96% children had no psycho-social problems. Parents and teachers report significant improvement of externalising (behavioural) problems and total problems in children with psycho-social problems at point of time 1. Teachers also report improvement of internalising (emotional) problems. Parents and teachers agree in 8-25% of the cases. (2) Of the children 46% experienced life-events, no correlation was found with changes in psycho-social health. Findings may be explained by regular school attendance, resilience of the children and variability in the normative development. Remarkable dynamic is observed in change of psycho-social problems. Psycho-social development in early childhood is rather liable to change and life-events do not strongly influence psycho-social health.

Berkhout, L., Hoekman, J., & Goorhuis-Brouwer, S.M. (2011b). Psychosocial health and life-events - dynamical development in the short term. A follow-up study of children at four and six years of age. *Early Child Development and Care, 1-15.* DOI:10.1080/03004430.2011.561343

Introduction

'Psycho-social health' consists of the components 'psycho-social' and 'health' (Martikainen, Bartley, & Lahelmac, 2002). According to the World Health Organisation (WHO), health is 'a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity' (WHO, 1948). In this rather broad definition 'health' is described as a static state, while in more recent notions health is seen as a dynamic process with fluctuations in physical and mental functioning and social participation.

Psycho-social health is based on the abilities of the individual to cope adequately with different and also difficult circumstances, in which emotional competencies as well as social facilities play a role. In early childhood, children are vulnerable and depended on parents and caregivers. The emotional and social well-being of young children is for a greater part influenced by the way parents cope with stressful events. In addition, child-like characteristics as temperament and the regulation of emotions appeal to the capacity of the child itself to cope with adverse circumstances (Masten, Best, & Garmezy, 1990; Rothbart, & Bates, 2006). The potential of children to demonstrate positive adaptation is of influence on the arising or the continuing of problems (Campbell, 2002). Disturbance of the development of young children may evoke externalising problems (opposition, aggression, inattention) and/or internalising problems (anxious-depressed, emotional-reactive) (e.g. Campbell, 1995, 2002). In addition, the progression of the child through notable developmental milestones and the variation with which individual children reach significant milestones have to be taken in account when certain behaviour is defined as deviant from the normative development. Gender differences play a role as well. In general, internalising and externalising problem behaviour points to behaviour that is not in accordance with the age and expected mental developmental stage (Achenbach, & Rescorla, 2000; Verhulst, 2005).

The developmental pathways to externalising and/or internalising problems from early childhood and beyond are complex because child, family and social factors influence each other. The longitudinal study of Smeekens, Riksen-Walraven and Van Bakel (2007) demonstrates that externalising problems at the age of five could be predicted on the basis of characteristics of the child (temperament, low IQ), the parent-child relation (patterns of attachment, interaction), features of the parents (ego-resiliency) and contextual characteristics (life-events, partner support, low economical status) at the ages of 15 and 28 months. It was found that social-economic

status and life-events did not predict externalising behaviour. However, patterns of disorganised attachment at 15 months and negative parent-child interaction at 28 months were found to predict externalising behaviour at the age of five.

In addition, the social relations of the child and the status of social acceptance within the peer group may cause psycho-social problems. Keily, Bates, Dodge, and Pettit (2000) found in an eight-year longitudinal study that mothers reported in rejected children a higher initial level of externalising and internalising behaviour. This behaviour remained stable or increased faster than with non-rejected children. Teachers reported more externalising behaviour in boys than in girls. According to the teachers, children from low-income families showed higher initial levels of externalising and internalising behaviour. Moreover, in the course of childhood a shift can occur from distinct forms of externalising (hostile – aggressive) behaviour to internalising (emotional) problems (Slemming et al., 2010).

In boys and girls the pathways of emotional and behavioural problems are different, although some research results contradict each other (Campbell, 1995). The initial level of psycho-social problems in boys and girls is the same. After the age of four, externalising problems in boys increase while internalising problems are stable for boys and girls. In (pre-) adolescence girls show more internalising problems, while boys still have more externalising problems than girls (Campbell, 1995; Prinzie, 2004). The longitudinal study of Mesman, Bongers, and Koot (2001) demonstrated that the developmental pathways to internalising and externalising problems in boys are more complex and have a greater predictive value than in girls. In addition, with regard to boys, social problems at the school start (at age 4-5) play a significant role in the pathway to internalising problems.

Prevalence of psycho-social problems

In the review of research of behavioural problems of children younger than six years of age, Campbell (1995) found 10-15% of children with mild to moderate problems. Comparable percentages were found in more recent research: in the Netherlands, psycho-social problems were found in 6-15% of the children from nought to twelve years of age and an accumulation of problems was found among 5% of the children (Zeijl, Crone, Wiefferink, Keuzenkamp, & Reijneveld, 2005). In Germany, the 'Kinder und Jugend Gesundheits Survey (KiGGS)' (Hölling, Erhart, Ravens-Sieberer, & Schlack, 2007; Ravens-Sieberer, Wille, Bettge, & Erhart, 2007) demonstrated that 11% of the girls and 16% of the boys at the ages from three to six have a score in the (sub)clinical range. In a representative sample of six year old children, psycho-social problems were found among 12.4% of the children but no significant differences between boys and girls were found (Furniss, Beyer, & Guggenmos, 2006). In contrast to other studies, Furniss et al. (2006) found in boys a significant higher score of internalising problems than in externalising problems.

In the onset of psychosocial problems 'protective' and 'risk' factors play an important role (Asscher, & Paulussen-Hoogenboom, 2005; Masten, Best, & Garmezy, 1990; Masten, 2001).
Protective factors form a buffer in difficult circumstances and are found on three levels as follows:

At the level of the child, it concerns factors such as easy temperament, intelligence and resilience (Hermanns, Öry, & Schrijvers, 2005; Masten, 2001). 'Resilience refers to the process of, capacity for or outcome of successful adaptation despite challenging or threatening circumstances' (Masten, Best, & Garmezy, 1990, p. 425).
Protective family factors are warm and supportive parenting, good relations between members of the family and a good relation with one of the parents.
Social support from the family, friends, employment of the parents and the school constitute important protective factors.

Risk factors are also represented at three levels (Hermanns, Öry, & Schrijvers, 2005):
At the level of the child it concerns factors, such as low birth weight, difficult temperament and low intelligence.
Risk factors at the family level are, for example, violence between the parents, low level of education, one-parent family and parental psychiatric problems.
Poverty, low social-economical status and bad neighbourhood are risk factors at the societal level.

Often, risk factors are connected and cause a cascade of negativity; loss of work can lead to poverty and an increase of stress which can result in neglect and child abuse. The presence of one risk factor does not necessarily cause problems. However, if there is an accumulation of risk factors at the same time, children are more vulnerable to a disturbed development, specifically when they belong to a risk group (Appleyard, Egeland, van Dulmen, & Sroufe, 2005; Smeekens, Riksen-Walraven, & Van Bakel, 2007). A risk group is, for example, a low income population (Shaw, Keenan, Vondra, Delliquadri, & Giovannelli, 1997), deceased parent (Thompson et al., 1998) or a clinical population.
Life-events like serious illness, divorce or a catastrophe can disturb the family system in such a way that protective factors are shortcoming as a buffer. In a representative sample it was found that children whose parents were divorced or lost their job in the recent past were lightly prone to behavioural and emotional problems (Harland, Reijneveld, Brugman, Verloove-Vanhorick, & Verhulst, 2002). According tot Campbell (2002) not only the initial level of the family problems is decisive for coping with life-events but also the family context in the course of the time. 'Although early family adversity did not predict outcome, persistent difficulties were

associated with *ongoing* family problems, including continued marital dysfunction, maternal illness and depression, and more external psycho-social stress' (Campbell, 2002, p. 243). Decrease in problems often is related to the improvement of the quality of family relations (Campbell, 1995).

Interest of this study

Research of the prevalence of psycho-social problems often is focussed on great numbers of children or on groups with certain characteristics (e.g. low-income, clinical population etc.) in which only the parents are informants. In follow-up studies not always the same children as in the first measure are referred to, instead children with similar features are used (e.g.Verhulst, van der Ende, & Rietbergen, 1997). As a result, neither individual variations are being researched nor differences in judgements between informants. Furthermore, the influence of an accumulation of life-events in non-clinical samples has - up until now - not been addressed very often.
In our former study, the prevalence of psycho-social problems was researched for four-year-old children at entrance of elementary[1] school with parents and teachers as informants (Berkhout, Dolk, & Goorhuis-Brouwer, 2012).
The aim of the present follow-up study after 1.8 years is to investigate the changes in psycho-social health of boys and girls, respectively, according to the parents and the teachers. At the same time the correlation between changes in behavioural- and emotional problems and the occurrence of one ore more life-events is researched.

Method

Children from 20 different schools were included in the research. Parents and teachers accepted the arrangement to fill out questionnaires about the psycho-social development of the children at ages four and six. The schools were situated in several small and middle sized cities (between 28,000 and 170,000 inhabitants) spread across the Netherlands.

Participants

In the first measurement, a total of 228 children were included: 129 (56%) girls and 99 (45%) boys. With respect to these children, the Child Behavior Checklist 1.6-5 years (CBCL, Achenbach, & Rescorla, 2000) as well as the Caregiver-Teacher Report Form 1.6-5 years (C-TRF, Achenbach, & Rescorla, 2000) were filled out. The mean age of the children was 51,8 months (SD 3,0) at point of time 1. At point of time 1 the scores of 88-98% of the participants were in the normal range. The spread of 10% was caused by the respondent (parent or teacher) and by the sex (boy or girl) (Berkhout, Dolk, & Goorhuis-Brouwer, 2010).
In the second measurement, both the parent (CBCL 1.6-5) and teacher report form (C-TRF 1.6-5) was filled out with respect to in total 156 (68%) children out of 228

children of the first measure. The mean age was 68,1 months (SD 3,8) at point of time 2.
With regard to 72 children (32%) only one or no questionnaire was filled out. These children were excluded from the research.
In addition to the second measurement, an information list was filled out by the parents. The questions concerned demographic information and life-events in the intermediate period. For 136 (87%) of the total number of children (N=156) this information list was filled out.
The sample existed of 89 girls (57%) and 67 (43%) boys. The family status was as following: 87% two parent households, 12% divorced, 1% other family status.
The highest education of the mothers was: university/university college 51%, vocational training 43%, other education 5%. The highest education of the fathers was: university/university college 55%, vocational training 40%, other education 5%.

Instruments

The CBCL and the C-TRF are empirically validated questionnaires which are internationally used in this type of research (Achenbach, & Rescorla, 2000). Standardised information is being gathered about the emotional and behavioural development of the child. Both questionnaires include a 100 items. Parents (CBCL) and teachers (C-TRF) score the behaviour of the child in the last two months before filling it out. A score of 0 is ascribed when the behaviour is not observed, a score of 1 is ascribed when the behaviour is observed a little or sometimes and a score of 2 is ascribed when the behaviour is clearly or often observed. A distinction is made in internalising behaviour (anxious – depressed, emotional- reactive and somatic complaints) and externalising behaviour (attention and aggression problems). Items of internalising behaviour are for example: the child is… disturbed by any change in routine, and the child… gets too upset when separated from parents. Items of somatic complaints are, for example, nausea, feels sick (without medical cause). Items of externalising behaviour are, for example, the child.. wanders away and the child is .. cruel to animals. The rating of the scores differ according to the age and the gender of the children. For example, a two-year-old boy may explore the fur of a cat by grasping and pulling, which is not meant to be cruel. However, when a five-year-old boy shows the same behaviour on several occasions, it may be reported as cruel to animals.
By means of the computer programme (ADM, 2000) that belongs to the CBCL and the C-TRF the *T* values are calculated on the internalising, externalising and total problem scales.
T values from 0 through 59 are in the normal range, from 60 through 63 are in the sub clinical range and from 64 through 100 are in the clinical range.
The questions in the additional parent information list concern: family status, education of the father and mother and stressful life-events in the intermediate time

between the first and second measurement. Life-events are: moving house, birth of brother or sister, divorce, decease of kinship, serious illness or hospitalisation of the child, serious illness or hospitalisation of parents or family member, loss of employment by one of the parents and other important life-events.

Measurements

The Independent Samples *t*-test (Statistical Package for the Social Sciences (SPSS) 16.0) was used to compute differences between the non-response group (*N*=72) and the response group (*N*=156). The same test was used to calculate the differences in the scores of boys and girls.

The Paired Samples *t*-test (SPSS 16.0) was used to compute the differences between the first and the second measurement for the three main problem scales (internalising, externalising, total) and for the syndrome scales of the CBCL and the C-TRF.

To calculate the shift in scores (amelioration or deterioration) between the first and second measurement, the scores on the three main scales were classified as follows: score in normal range = 0, score in sub clinical range = 1, and score in clinical range = 2.

With the help of cross tabulation the shift in classifications was researched, both for boys and girls. A shift from class 0 to class 1 or 2, points to deterioration. A shift from class 2 or 1, respectively, to 1 or 0, points to amelioration. Theoretically a stable score is possible in each class.

To investigate whether parents and teachers ascribe the shift in classified scores to the same children or to different children, all individual cases were compared.

Descriptive statistic was used to analyse the prevalence of life-events among children with scores in the normal range and with scores in the (sub) clinical range.

The point biserial correlation (r_{pb}) was computed between the differences in scores from the first and second measurement on the three main problem scales (internalising, externalising, total) of C-TRF and life-events.

Pearson's *r* was computed between the differences in scores from the first and second measurement on the three main scales of the C-TRF and the total number of life-events.

Results

No significant differences were found between the non-response and the response group on the internalising (Int.), externalising (Ext.) and total (Tot.) problem scale of the C-TRF and the CBCL, respectively. Subsequently for each of the main scales the following is reported:

Mean Difference (MD), *t*-value (*t*) and significance (*p*).

C-TRF: Int. MD = -1.49, $t = -1.11$, $p = 0.27$; Ext. MD = -2.14; $t = -1.84$, $p = 0.07$; Tot. MD = -2.35; $t = -1.85$, $p = 0.07$.

CBCL: Int. MD = -.16, t = -.11, p = .91; Ext. MD = -.54, t = -.42, p = .68; Tot. MD = -.03, t = -.02, p = .98.

Psycho-social health in the follow-up study

The percentage of children with a score in the normal range according tot the parents varies from 87.7% to 95.5% on the three main scales. According to the teachers the percentage of children with a score in the normal range varies from 92.9% to 94.4% on the three main scales (see Table 1a).

According to the parents, significant amelioration between the first and the second measurement was observed on the externalising and the total problem scale. Teachers reported significant amelioration between the measurements on all the three main problem scales (see Table 1b). Between boys and girls no significant differences were found.

The minimum and the maximum points of difference (spread), the mean difference in scores (Mean) and the standard deviation (SD) between the first and the second measurement on the three main scales refer to information about the dynamic of change within two years (see Table 1c).

Table 1a. Percentages of children with scores in the normal and (sub)clinical range according to parents (CBCL) and teachers (C-TRF) on main scales (*N*=156).

	Normal	subclinical	Clinical
According to parents			
Internalising %	87.7	7.7	4.5
Externalising %	94.9	3.8	1.3
Total %	95.5	3.8	0.6
According to teachers			
Internalising %	94.4	1.9	3.2
Externalising %	94.9	3.2	1.9
Total %	92.9	4.5	2.6

Table 1b. Differences in scores between first and second measurement on internalising, externalising and total problem scale. According to parents (CBCL) and teachers (C-TRF). (paired samples *t*-test) (*N*= 156).

	Mean	T	df	Sig.(2 tailed)
According to parents				
Internalising	-.50	-.71	155	.48
Externalising	-1.54	-2.74	155	.007**
Total	-1.39	-2.43	155	.016*
According to teachers				
Internalising	-1.60	-2.18	155	.03*
Externalising	-1.67	-3.25	155	.001**
Total	-2.05	-3.27	155	.001**

* $p \leq .05$; ** $p \leq .01$

Table 1c. Mean difference and spread (min. and max.) of points on the three main scales of CBL and C-TRF between measurement 1 and 2.

	Spread	Mean	SD
CBCL			
Internalising	0 -27	6.72	5.74
Externalising	0 -19	5.69	4.37
Total	0 -20	5.63	4.55
C-TRF			
Internalising	0 -25	7.18	5.91
Externalising	0 -19	5.03	4.31
Total	0 -23	6.31	5.06

Differences between boys and girls in scores on syndrome scales in the first and second measurement

With respect to the girls, amelioration is reported by the parents on all syndrome scales except on the scale of withdrawn behaviour and scarcely (-0.03) on the scale of anxious-depressed problems. The teachers reported amelioration on all syndrome scales (see Table 2).
With respect to the boys, parents reported amelioration on the scales of somatic com-

plaints, sleeping problems and aggressive behaviour. Teachers reported amelioration on the scales of anxious-depressed, withdrawn, and attention problems and aggressive behaviour (see Table 2).

No significant differences between the scores of boys and girls were found, except on the syndrome scale of attention problems (Mean difference = -1.09, t = - 1.97, p = 0.05). According to Table 2, attention problems of girls decreased (mean -0.51)

Table 2 Syndrome scales. Differences between first and second measurement for girls respectively boys, according to parents respectively teachers.

Girls (N=89)

	Parents				Teachers		
	Mean	t	Sig. (two tailed)	df	Mean	t	Sig. (two tailed)
Emotional reactive	-.24	-.37	.71	88	-.45	-.74	.46
Anxious/ depressed	-.03	-.07	.94	88	-.42	-.76	.45
Somatic complaints	-.91	-1.37	.18	88	-.26	-.38	.70
Withdrawn	.27	.56	.58	88	-.29	-.91	.37
Sleep problems	-.72	-1.42	.16	88	-	-	-
Attention problems	-.51	-1.28	.20	88	-.74	-1.83	.07
Aggressive behaviour	-.72	-1.62	.11	88	-.43	-.94	.35

* $p \leq .05$

Boys (N=67)

	Parents				Teachers		
	Mean	t	Sig. (two tailed)	df	Mean	t	Sig. (two tailed)
Emotional reactive	.91	1.46	.15	66	.46	.06	.95
Anxious/ depressed	.02	.05	.96	66	-.43	-.66	.51
Somatic complaints	-.81	-1.08	.29	66	.37	.47	.64
Withdrawn	.34	.79	.43	66	-.88	-1.67	.10
Sleep problems	-31	-1.13	.26	66	-	-	-
Attention problems	.58	1.61	.11	66	-.24	-.49	.63
Aggressive behaviour	-.25	-.78	.44	66	-.24	-.66	.51

* $p \leq .05$.

whereas the attention problems of boys increased (mean 0.58)
In the comparison of the first and second measurement, a stable class 2 was found in one case on the total problem scale of the C-TRF. In three cases a stable class 2 on the internalising scale of the CBCL was found. In all other cases a stable class 0 was found (see Table 3a).

Table 3a Shift of classes (percentages) between first and second measurement on the internalising, externalising and total problem scale. According to parents respectively teachers (*N*=156).

	Stable %	Deterioration %	Amelioration %
Parents			
Internalising	85	6	8
Externalising	92	5	3
Total	92	4	4
Teachers			
Internalising	91	5	4
Externalising	90	5	5
Total	88	6	6

Table 3b Agreement betweenmteachers and parents on the changes in psychosocial development with respect to the same children.

	Deterioration			Amelioration		
	Teacher	**Parent**	**Common**	**Teacher**	**Parent**	**Common**
Internalising	7	10	2 (13%)	7	13	1 (5%)
Externalising	8	7	2 (15%)	8	5	1 (8%)
Total	9	6	3 (25%)	10	6	2 (14%)

Parents as well as teachers reported changes in the psycho-social development of children within 1.8 year. The highest agreement between parents and teachers is 25% and the lowest agreement is 5% (see Table 3b).

The influence of life-events and the accumulation of life-events
The distribution of life-events among children with a score in the normal or the (sub) clinical range on the total problem scale of the C-TRF is presented in Table 4a.

Correlation between the difference in scores (first and second measure ment) and life-events

A significant correlation r_{pb} = 0.17 (p = 0.05) was found between life-event 'moving house' and the difference of the score on the total problem scale of the C-TRF. However, the strength of the correlation is weak. With respect to the other life-events, no significant correlation was found among any of the three main problem scales.

Accumulation of life-events

Analysis of the parent information list reveals that the accumulation of life-events comes to maximal four. In the group of children with a score in the normal range (N=123) a number of 0, 1, 2, 3, and 4 life-events are found. The group of children with a (sub)clinical score (N=9) experienced 0, 1, or 2 life-events (see Table 4b).

Table 4a Distribution of life-events. Scores in normal and (sub)clinical range on the total problem scale of C-TRF (N=132)

Life-event	Normal (N=123)		(Sub)clinical (N=9)	
	Number of children	Percentage	Number of children	Percentage
Moving house	13	11 %	2	22 %
Birth of brother or sister	18	15 %	0	0 %
Divorce	8	7 %	0	0 %
Decease of kinship	25	20 %	1	11 %
Serious illness or hospitalisation of the child	7	6 %	1	11 %
Serious illness or hospitalisation of a parent or family member	13	11 %	0	0 %
Loss of employment of one of the parents	6	5 %	0	0 %

Table 4b Number of life-events in the normal and (sub)clinical group (N=132)

	0	1	2	3	4	Total
Normal	65	36	14	6	2	123
	52.8%	29.3%	11.4%	4.9%	1.6%	100%
(Sub)clinical	6	2	1	0	0	9
	66.7%	22.2%	11.1%	.0%	.0%	100%
Total	71	38	15	6	2	132
	53.8%	28.8%	11.4%	4.5%	1.5%	100%

No significant correlation (Pearson's r) is found between the total number of life-events and the difference in scores of both measurements on the Internalising scale (r = 0.108; p = 0.218), externalising scale (r = -0.028; p = 0.754) and total problem scale (r = 0.077; p = 0.381).

Discussion and conclusions

The aim of this study was firstly to investigate how the psycho-social health of four year old children on entry into elementary school changes in the course of one year and eight months; and secondly, whether life-events and the accumulation of life-events may cause changes in psycho-social health.

Prevalence of emotional and behavioural problems

The first measurement showed that scores on the total problem scale of the CBCL and the C-TRF were between 88% and 98% in the normal range (Berkhout, Dolk, & Goorhuis-Brouwer, 2010). In the second measurement the scores on the total problem scale were between 93% and 96% in the normal range (this study). A significant amelioration was found in externalising and total problems according to parents and teachers. In addition, teachers reported amelioration in internalising problems.

The results of the follow-up study in which a score of 4%-8% in the (sub)clinical range was reported, do not correspond with the findings of a great number of researches in which a score of 10% - 15% is mentioned (e.g. Campbell, 1995). A possible explanation is that our sample is relatively small in comparison to the epidemiological studies to which the 10%-15% refer.

Thus, an accidental variance may cause this difference. Moreover, there is a general problem with cut-off points of measurement instruments like the CBCL and C-TRF (Campbell, 1995); a difference of, for example, 15 points is a substantial difference, but does not imply that the cut-off point between the normal and the sub-clinical range is reached (for instance, when the initial score is relatively far from the cut-off point). However, when there are many children in the sample whose scores in the first measurement are close to the cut-off point of the normal range, a relatively small increase in the scores in the second measurement may cause a shift to the sub clinical range, because the cut-off score is passed. Therefore findings on instruments as the CBCL and C-TRF have to be interpreted cautiously.

In addition, sociocultural factors may play a role in the different results. The studies mentioned in this article concerned mainly the USA (Campbell, 2001), Germany (Hölling et al.2007; Furniss, Beyer, & Guggenmos, 2006) and the Netherlands (Harland et al., 2002; Verhulst, van der Ende, & Rietbergen, 1997). In the USA and Germany the statutory school age is six and in the Netherlands five (OECD, 2006).The curricula for children from four to six years of age in these coun-

tries differ significantly. In the USA, a shift is observed from a play based curriculum towards a more academic programme (Hirsh-Pasek, Golinkoff, Berk, & Singer, 2009; Miller, & Almon, 2009). Therefore, the demands upon the behaviour of young children may increase when academic skills are required. In the Netherlands, a comparable trend is observed (Meijer, 2006). In Germany, a play based curriculum is current in general (Tieze, 1998). In sum, further cross-cultural studies may gain insight in correlations between demands upon young children in different cultural settings and psycho-social problems.

Changes in the scores of boys and girls on the syndrome scales

The significant amelioration on the externalising problem scale is especially to be ascribed to the decrease of attention problems in girls. Apparently, regulation of attention in girls is developing in the course of attending school. The decrease of externalising problems in girls corresponds with research findings (e.g. Bongers, Koot, van der Ende, & Verhulst, 2003; Prinzie, 2004). In boys the reflections are more complex (Campbell, 1995, 2001); in this follow-up study parents as well as teachers report no amelioration in emotionally reactive behaviour. Teachers mention improvement of anxious-depressed complaints, but parents do not report any improvement. Furniss et al. (2006) only used the CBCL in their study and found with respect to the syndrome scales that six year old boys scored highest on the anxious-depressed scale.

The main change at the ages of four through six is the transition from pre-school to elementary school. Within about two years the educational programme in school changes from playing into learning (Goorhuis-Brouwer, 2004). The demands on the emotional, social and cognitive field increase. The quality of the adaptation to the new situation is crucial for the further development (Smeekens et al., 2007) and obviously different for boys and girls. Emotional problems demonstrated in withdrawn behaviour are less marked than behavioural problems. Therefore it is important that especially boys receive adequate support.

Changes at the individual level of the children

A closer look at the differences between the first and the second measurement reveals that there are changes that point to an amelioration or a deterioration of the scores. For example, on the total problem scale of the CBCL, 92% of the children score stable, 4% score amelioration and 4% deterioration. Therefore, it may seem that counted for the group as a whole increase and decrease in scores are in equilibrium, however it constitutes notable changes for individual children within 1.8 years. These fast changes may be ascribed to the normative development that, especially in young children, can demonstrate considerable variability (Van Geert, & Steenbeek, 2005). Problems may arise but they also may be solved.

In addition, the educational programme and the predictable regularity of attending

school may be helpful. A phase of transition often is characterised by fast changes (Van Geert, & Steenbeek, 2005). Therefore, it is important that when psycho-social problems are diagnosed they do not immediately get a lasting label.
A more specific analysis at the level of the individual cases reveals that there is little agreement between the judgements of parents and of teachers, both with respect to amelioration and deterioration. From the literature it is known that parents and teachers may differ in their judgements (e.g. Keily et al., 2000); teachers may compare the behaviour of the children to peers, while parents mostly do not have this option. In addition, behavioural problems can depend on situational factors, which include the people with whom the children interact. The demands upon children in a family setting or in a classroom situation may differ significantly (Coster, 2001). Moreover, children use more expanded and complex language during play with peers than in communication with the teacher (Deunk, 2009).
Our findings confirm that in signalling psycho-social problems it is important to take the different viewpoints of parents and teachers into account.

Differences between scores in the first and in the second measurement in relation to life-events

The life-events mentioned in this study were derived from the epidemiological study of Harland et al. (2002). The character of the life- events varied from rather 'normal' such as moving house and birth of a sibling to rather 'severe' such as divorce or decease of kinship. The impact of life-events, and especially an accumulation of occurrences, on the family system may be strong in families with little 'buffer' or little protective factors.
No significant correlation was found between the scores on the C-TRF for both measurements and life-events. Children with a score in the normal range more often experienced life-events than children with a (sub)clinical score. A weak correlation was found with moving house. Even though 15 children moved, they stayed at the same school.
No correlation was found between psycho-social health and decease of kinship, although 26 (20%) children experienced this life-event and decease is seen as a stressful event in the literature (Thompson et al., 1998). A possible explanation is that the chance of later psycho-social problems in the presence of *one* risk factor, is only a few percentages higher than total lack of life-events (Appleyard, Egeland, Dulmen, & Sroufe, 2005; Asscher, & Paulussen- Hoogenboom, 2005). The families in this study live in middle sized towns and are a mixture of low, middle and high economic status. Protective factors may be of influence in coping with life-events; the mean educational level of the parents is quite high and 87% of the children live in a two-parent family. In addition, school may create a constant protective factor (Masten, 2001).
On the resilience of the children insufficient information is available; however, the

dynamics of the emotional and behavioural problems prove that the greater part of the children is well adapted to the circumstances. In this way, the research findings correspond to more recent notions in which psycho-social health is conceived as a dynamic process rather than a static state.

Limitation and importance of the findings

The limitation of this study concerns the sample size, which is fairly small. Especially in the analysis of life-events in relation to the group children with a score in the sub-clinical range. Therefore, caution should be taken in generalising the findings reported in this investigation to larger populations.

An important finding is that boys have internalizing (i.e. emotional-reactive) problems at the school start. This finding is new because in most research externalising problems are found in boys. The finding that parents and teachers differ in their judgements have to be taken in account with respect to the diagnosis and prevention of psycho-social problems. Furthermore, resilience of young children in relation to life-events and the role of the school are important factors in dynamic developmental processes that need further research.

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8 General Discussion

In this research study the following subjects have been investigated: the opinions of teachers on psycho-social development and play (Chapter 2), play in the classroom setting (Chapters 3 and 4), playing at home and psycho-social health (Chapter 5), psycho-social health at the entry into school (Chapter 6) and the influence of life-events on psycho-social health (Chapter 7). Moreover, in Chapters 5, 6 and 7 specific attention has been given to gender.

In the following paragraphs we will discuss the results of the studies.

General discussion

Teachers' views on the psycho-social development of children from four to six years of age *(Chapter 2)*

The intention of this study was to investigate the opinions of teachers on the psycho-social development and play in today's classes in the Netherlands. Up until now, the opinions of teachers on early childhood development have not been widely investigated. Although teachers regularly evaluate the progression of learning achievements, psycho-social learning and development seem to be under-examined. Specifically the relation between psycho-social development and play. According to the studies of Howard (2010) and König (2009) today's professionals in early education and care are scarcely acquainted with the developmental aspects of play.

With our study we aim to contribute to the important field of early childhood. In this study experienced teachers have been interviewed about their opinions on psycho-social development and play. The outcome of the qualitative analysis of the interviews, is that teachers describe play as an integral part of the psycho-social development of children based on three notions: first, the conditions for play are a safe and stimulating environment. Second, play contributes to the unique development of the child. Third, the teacher has a protective and stimulating role during play time. Furthermore, teachers state that especially 'pretend play', in which children can express themselves in their own way, contributes to communication skills and social cognition. According to the teachers, in pretend play children create their own stories, often based upon experiences that offer a meaningful context for their thinking and playing in a shared fantasy world with other children *and* the teacher. The teachers state that thinking and acting in children's' own stories give children grip on the world, whereas fragmented information, such as in several educational programmes, lack context and is therefore often not understood by children. Thus child-initiated play is an important factor for psycho-social development according to the experienced teachers.

This means that the teachers do not agree with the current opinion, expressed in the present curriculum for children aged four to six years, that structured playing is essential. In the modern discussion about free play versus cognitive learning in a playful way, the teachers choose for free play. This finding is in line with the literature on the contribution of play to social understanding and communication (e.g. Gussin Paley, 2004; Miller & Almon, 2009; Singer, Golinkoff, & Hirsh-Paek, 2006). However, as already mentioned in the research of Howard (2010) and König

(2009) less experienced or less educated teachers may not offer a stimulating environment for child-initiated play. Therefore more attention should be given in the teacher training to psycho-social development and play. In addition, when time for playing at school is diminishing in favour of structured play and educational programmes, we have to consider as to whether this is a desirable development.

Observation instrument of play behaviour in a classroom setting *(Chapter 3)*

Observation instruments have been specifically developed for observing individuals (e.g. McCune-Nicolich, 1980; Rubin, 2001). However, to observe a whole class of playing children a new instrument was needed. Therefore we developed an observation instrument in cooperation with experts on play and with teachers in order to analyse the play behaviour of all children in a classroom setting, as described in chapter 3. As a result of this study, a simple and clearly structured observation instrument has been developed with an almost perfect inter-observer reliability. The instrument covers all different forms of play that are normally present in classrooms with children aged four to six.

The groups analysis offers another view on play behaviour. Besides research purposes, the instrument can be used by teachers to observe and discuss play behaviour. In case of a deficit in play activities, supplementary activities can be stimulated.

The observation instrument can eventually be extended to include qualitative observation categories.

Observing free play in classrooms with an instrument based on video analysis *(Chapter 4)*

A wealth of literature exists on different forms of play, such as motor-, construction-, pretend- or sensory play. However, the literature is scarce on whether different forms of play are present at the same time in a classroom setting. In the research study described in chapter 4, videos have been captured during free play time in the 47 classes of the interviewed teachers. The greatest part of the classes was heterogeneous i.e. consisted of children aged four to six. In total 877 children were allowed to play and to do activities at their desks like drawing, handcraft, work with audio-visual equipment. The observation instrument described in chapter 3 was used to analyse the videos. We found that make-believe play and activities at desk were observed most frequently. The finding that make-believe play was observed most among children four to six years of age affirms the theory of Vygotski (in Bodrova & Leong, 2007) that make-believe play is the leading activity in this age period. As mentioned earlier (chapter 2), make-believe play is the most mature form of play that unites cognitive, emotional and social competencies (e.g. Van der Pol, 2005; Göncu, Patt, & Kouba, 2002).

In the classrooms sensory play (with sand, water, dough) was also observed in every time slot. In the literature on play, sensory play is seldom mentioned with respect to children aged four to six. However, we observed that when these materials are available, children make use of them often in co-occurence with fantasy play. Thus, a rich playing environment provides for a variety of activities. Construction play was observed as often as sensory play. Motor play (gross motor activity) was observed more often in classes with a small group size than in classes with a large group size, although this was only observed in three time slots. For boys, gross motor activity is important (e.g. Pellegrini, 2006). When teachers intend to meet the needs of boys, a small group size and a spacious classroom are prerequisites. Possibly this will lead to less aggression and more rough-and-tumble play.

The analysis showed that in all classrooms a variety of forms in child-initiated play could be observed. In this way, the development of the whole child (physical, emotional, social and cognitive) is enhanced. To foster psycho-social health, a variety of play activities should be offered.

The teachers were experienced and had knowledge of the contributions of play to development. Therefore research in schools with less experienced or younger teachers is needed to investigate whether in these schools a variety of play is found as well.

Playing at home and psycho-social health of four-year-old boys and girls *(Chapter 5)*

The aim of the fourth research study was to investigate the play behaviour of children at home in relation to psycho-social health. We focussed on gender differences, as a better understanding of boys and girls may lead to a more sophisticated approach at home as well as at school.

In this study parents of four- year-old children filled out a questionnaire about the play behaviour of their children at home and a questionnaire about the psycho-social behaviour.

The results showed that among 96 % of the children the play behaviour corresponded to their age and among 3% it corresponded partially to their age. Boys played significantly more motor play and construction play than girls, and girls significantly more than boys showed pretend play and creative play activities according to their parents. Boys with a (sub-) clinical score on the scale of total problems of the Child Behavior Check List 1 ½ -5 (Achenbach & Rescorla, 2000) more often played together with peers than boys with a normal score. Girls with a (sub-) clinical score on the scale of externalising problems significantly played less together with peers than girls with a normal score.

The (unexpected) finding that boys with a (sub) clinical score more often played together with peers than girls with a (sub) clinical score may be explained by a gender specific way of taking part in playing and by the play activities itself. All

the boys in the research group, including the boys with a (sub)clinical score, showed more motor play and construction play which need less verbal interaction than pretend play. This result has to be explored further, because nuances are necessary for the interpretation of 'normal' play of boys. Crott (2012) stated in a historical overview of the behaviour of boys, that in former days impulsive, energetic and physical play were normal expressions of healthy boys while nowadays this behaviour would be labelled as Attention Deficit Hyperactivity Disorder. Thus the question may be posed whether the behaviour of boys has changed or whether the common opinion about 'normal' behaviour has altered or both. Boys seem to have more problems nowadays than before, both in elementary education and in secondary education (e.g. Geerdink, Bergen, & Dekkers, 2004). Boys more often than girls drop out of school without a certificate, which is becoming a societal problem. Therefore it is necessary that the behaviour of boys is investigated further in more extended studies.

All the girls of the research sample showed more pretend play and creative activity. The girls with a (sub-) clinical score on the externalising problem scale played might have more problems with consulting and therefore play less together with others.
In conclusion, our findings contribute to a closer look at gender and play.

The way of playing, the concentration and the duration of play has been summarised as the quality of play. A significant and moderately high correlation (r_s = -.32; p = .000) was found between attention problems and the quality of play, which means that children with a (sub-) clinical score on the scale of attention problems played less well, for a shorter time and with less concentration. This result is in line with findings on attention problems in general (Verhulst & Verheij, 2006).

Psycho-social health of four- year- old boys and girls as observed by parents and teachers *(Chapter 6)*

The psycho-social health of 228 four-year-old children at the entry into school was investigated with the Child Behavior Checklist 1 ½ - 5 years and the Caregiver-Teacher Report Form (Achenbach & Rescorla, 2000). For the greater part the children were thriving. Among 2 -12% of the children psycho-social problems were found. In other Dutch, German and British epidemiological research studies, (i.e. Zeijl, Crone, Wiefferink, Keuzenkamp, & Reijneveld, 2005; Hölling, Erhart, Ravens-Sieberer, & Schlack, 2007; Ford, Goodman, & Meltzer, 2003) higher percentages have been found; namely 6 – 15%. The lower results in our research may be explained by the educational level of the parents (predominantly middle to high) and the family status (predominantly two-parent households), which indicates a rather low-risk research group.

Gender and differences in assessment between parents and teachers

Between parents and teachers significant differences were found in the assessments with respect to boys and girls. Externalising and total problems among girls were significantly more often identified by teachers than by parents (Externalising p=0.00; Total p=0.008). Total problems among boys were also significantly more often identified by teachers than by parents (Total p=0.008). Thus a clear distinction between the behaviour of girls and boys became apparent which raises the question whether these different reactions consolidate or change. Therefore longitudinal research is necessary because the progress of externalising problem behaviour over time is more stable than internalising problem behaviour (Pihlakoski, Sourander, Aromaa, Rautava, Helenius & Silanpää, 2006). Moreover, internalising problems often go unmarked.

Agreement between parents and teachers

When the psycho-social behaviour was assessed in our research, parents and teachers had only partially the same judgement about the problem behaviour of the children. This result may be interpreted in two ways: 1) There is insufficient agreement between parents and teachers, indicating the instrument is not reliable. Or 2) Children may behave different in situations at home and at school and therefore the assessments differ.

Regarding the first option, research proved that the instrument is reliable, and the cross-informant correlation sufficient (Achenbach & Rescorla, 2000). However, we have found that the agreement between parents and teachers in our research was lower than in the research of Achenbach and Rescorla (2000).

Regarding the second option, the judgement of both the parents and the teachers delivers information that is specific for the situation. This finding is in line with Achenbach, McConaughy & Howell (1987) and should be taken into account in our opinion. This means that the communication between parents and teachers should be promoted and that differences between observations of parents and teachers should be considered when psycho-social development is assessed.

In addition, the proposition of the municipality of Amsterdam (2009) to screen all four-year old children for psycho-social problems should be approached with cautiousness. Although screening may play a role in the prevention of psycho-social problems, our research indicates that it is important to define what is considered as problem behaviour, by whom and in what situation.

Psycho-social health and life-events - dynamic development in the short term. A follow-up study of children at four and six years of age *(Chapter 7)*

The psycho-social health of 156 children (89 girls, 67 boys) at four and six years of age was assessed by parents and teachers with the help of the Child Behavior Check List

and the Caregiver-Teacher Report Form (Achenbach & Rescorla, 2000). A questionnaire about life-events during the intermediate period was filled out by the parents. As a result of the study it was found that there is a dynamic process of increase and decrease of the psycho-social problems at four and six years of age. On the total problem scale of the CBCL, 92% of the children scored stable, 4% show amelioration, and 4% deterioration. Therefore, it may seem that considering the group as a whole, the increase and decrease of scores reach an equilibrium. However, it entails considerable differences for individual children over a period of 1 year and 8 months. These fast variations may be ascribed to the normative development that, especially in young children, can demonstrate considerable variability (Van Geert & Steenbeek, 2005). Problems may arise but they may also be solved. Therefore, it is important that when psycho-social problems are diagnosed they do not immediately receive a permanent label.

A more specific analysis at the level of the individual cases, reveals that there is little agreement between the judgement of parents and of teachers, both with respect to amelioration and deterioration of problems. These findings confirm our conclusion that in signalling psycho-social problems, it is important to take the different points of view of parents and teachers into account.

Influence of life events, risk and resilience

No significant correlation was found between the scores on the C-TRF for both measurements at four and six years of age and life-events, such as decease of kinship, divorce, moving house, birth of siblings, or serious illness. Children with a score in the normal range more often experienced life-events than children with a (sub-) clinical score. A weak correlation was found when moving house. Even though 15 children moved, they all stayed at the same school. The predictable regularity of attending school may have been helpful to them. In the schools of our research group, considerable attention is given to play and a variety of play enhances psycho-social health. Thus the resilience of the children may have been positively influenced. In addition, the family status and education of the parents predominantly point to rather low-risk circumstances in general, although the families were from diverse socio-economic backgrounds,

Strength and weaknesses of the research study

One of the strengths of our study is that at two points of time the psycho-social health of the children has been assessed. This made it possible not only to compare the changes over time for the group as a whole but also to investigate changes at the individual level. Furthermore, in the research two or more sources of information have been used; not only parents and teachers have been investigated about play and psycho-social health, but also observations of play have been made in the classrooms.

Lastly, we applied qualitative and quantitative methods and we developed an observation instrument in collaboration with experienced teachers and experts on play.
A limitation of this study is the size of the research group which makes it difficult to compare the results with epidemiological studies.
Another limitation concerns the schools that are included in the research group. In total 87 elementary schools, spread across the Netherlands, were invited to participate in the study. A total of 20 schools (23%) agreed to participate. These schools were situated in various small and middle sized towns (between 28.000 – 170.000 inhabitants).
The intention of the researchers was to select two types of schools: schools in which time for child-initiated play was provided and schools that mainly worked with a programmatic way of playing (i.e. more teacher centred). However, the response of the latter type of schools was minimal because research on play was not a priority for them. In addition, schools with a large population of non-Dutch speaking parents refused to take part in the study because it would be too time-consuming for the teachers to help illiterate parents with filling out the questionnaires.

Concluding remarks

In the general introduction two concerns were mentioned. The first concern was with the diminishing knowledge about the importance of playing and time provided for playing. The second concern was with psycho-social health of young children. Six research studies have been undertaken to investigate these concerns. We can conclude that the children of the research sample show a variety of play activities, at home as well as at school and that the quality of playing is mostly high at home. The teachers are experienced and share an interest in play. Furthermore, psycho-social problems are less apparent among the children of the research group than in epidemiological studies. When psycho-social problems are present, they do not always last over time. Psycho-social problems do not predominantly increase when children experience life-events. Apparently there are protective factors, both at home and at school, and the children may be more resilient.
As a result of our investigations, we may hypothesise that play is a protective factor and that psycho-social health is enhanced by a variety of play.

The results of the project described in this thesis allude to the following remarks:
1. Psycho-social development is fostered by a rich playing environment and a diversity of play forms in which children can express themselves. Time for playing is necessary in the curriculum of young children. Inexperienced and future teachers have to become acquainted with the needs of children on the one hand and the contribution of play to their development on the other hand.
2. The information of both parents and teachers is important when the psycho-social

health of young children is assessed. Especially anxious-depressed complaints among boys and girls need more attention as these problems now often go unmarked.
3. When children are being screened on psycho-social problems, it is important to keep in mind that due to developmental processes and the resilience of children, problems may arise but also may dissolve.

Recommendations for future research

As usual in research studies, an abundance of material has been collected that provides for further exploration:
- The video recordings may be analysed in a qualitative way, thus we may not only look at what do the children play (pretend-, motor play etc.) but also at *how* the children play (together, alone, concentrated etc.). This would add important information to the role of play in child development.
- Gender differences, both in play and psycho-social development need more attention of researchers, as understanding these differences may promote an appropriate approach to gender in parenting and education.
- It is important to investigate all aspects of play and psycho-social development in schools which have less experienced teachers and less time for playing in the curriculum than in our research group.

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9 Summary

Teachers' views on psycho-social development in children from four to six years of age Chapter 2

Psycho-social well-being is an important area of attention in early childhood care and education because when psycho-social problems appear, they can often persist past childhood.

Based on their working experience with many different children, teachers of young children are aware that they make important contributions to the healthy social and emotional development. The aim of this study is to explore the views of experienced teachers in facilitating the psycho-social development of children from 4 to 6 years of age.

Twenty teams of teachers, amounting in total to 52 teachers, were interviewed during small group sessions. The transcribed interviews were analysed qualitatively with a framework based on theories of play and psycho-social development. The findings were summarised according to particular themes.

As a result of the study the following themes appeared. Teachers described play as an integral part of the psycho-social development of children in which the conditions for play, the unique development of the child and the role of the teacher are included. Moreover, teachers found that especially 'pretend play', in which children can express themselves in their own way, contributes to communication skills and social cognition.

The findings may contribute to the growing discussion in early childhood education and care about the significance of play and the time provided for playing.

Observation instrument of play behaviour in a classroom set ting Chapter 3

The objective of this study was to develop an instrument to observe the play behaviour of a whole group of children from four to six years of age in a classroom setting on the basis of video recording. The instrument was developed in collaboration with experienced teachers and experts on play. Categories of play were derived from the literature and daily practice in Dutch classrooms (i.e. sensory, motor, construction, make-believe play and arts-and-games). Analysis of the video with the help of the observation instrument showed that the between-observer reliability was almost perfect. The simple and clearly structured instrument may be used by teachers or in teachers' education.

Teachers' views on psycho-social development in children from four to six years of age Chapter 2

Psycho-social well-being is an important area of attention in early childhood care and education because when psycho-social problems appear, they can often persist past childhood.

Based on their working experience with many different children, teachers of young children are aware that they make important contributions to the healthy social and emotional development. The aim of this study is to explore the views of experienced teachers in facilitating the psycho-social development of children from 4 to 6 years of age.

Twenty teams of teachers, amounting in total to 52 teachers, were interviewed during small group sessions. The transcribed interviews were analysed qualitatively with a framework based on theories of play and psycho-social development. The findings were summarised according to particular themes.

As a result of the study the following themes appeared. Teachers described play as an integral part of the psycho-social development of children in which the conditions for play, the unique development of the child and the role of the teacher are included. Moreover, teachers found that especially 'pretend play', in which children can express themselves in their own way, contributes to communication skills and social cognition.

The findings may contribute to the growing discussion in early childhood education and care about the significance of play and the time provided for playing.

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Observing free play in classrooms with an instrument based on video analysis Chapter 4

The aim of this study was to investigate the play behaviour of 877 children aged four to six in 47 classes of different sizes in The Netherlands. Video recordings were captured during choice (free play) time once in each class. The video recordings were

analysed by trained bachelor students in education with the help of an observation instrument. In child-initiated play, children showed a variety of play i.e. sensory, motor, construction, make-believe and, arts- and-games that contribute to the physical, emotional, social and cognitive development. Make-believe play and arts-and-games were observed most. A rich playing environment (e.g. sand and water, boxes to climb on) yielded variation in play. The results of this study show that experienced teachers and contextual factors are of importance to provoke a variety in play.

Playing at home and psycho-social health of four-year-old boys and girls Chapter 5

In this study the play activities at home are investigated in relation to the psycho-social health of four-year-old boys and girls as reported by the parents. Parents of 224 children filled out a questionnaire about the play behaviour of their four-year-old boys and girls at home. The psycho-social health of the children was assessed with the Child Behavior Checklist 1 ½ -5 year. Gender differences became apparent. Boys significantly played more motor play and construction play than girls. Girls significantly showed more pretend play and creative play activities. The play quality, concentration and duration of play was predominantly good. Psycho-social problems were absent in 95% of the girls and 97% of the boys. Girls with a (sub)clinical score on externalising problems played less together with peers and the play quality was lower. Unexpectedly, boys with a (sub)clinical score on Total problems played more often together with others. This may be explained by the kind of activities (motor play and construction play) which yields less verbal interaction than for instance pretend play. Both fathers and mothers played with their children. The results of this study show that gender and psycho-social health are of influence on play behaviour. More research about the specific contributions of play in relation to gender is needed.

Psycho-social health of four-year-old boys and girls, as observed by parents and teachers Chapter 6

Both parents and teachers assessed the psycho-social health of 228 four-year old children at the start of elementary school in the Netherlands. Assessments have been conducted using the Child Behavior Checklist (CBCL ages 1 ½ - 5) and the Caregiver-Teacher Report Form (C-TRF ages 1½ - 5). Results were compared to epidemiological studies with respect to informants, instruments, gender and age of the children. Most children in this study were thriving. The percentage of children without problems varied from 88 % to 98%. The difference depended on the informant (parent or teacher) and the gender. Teachers recognised significantly more externalising problems among girls and anxious/depressed problems among boys and girls. Parents reported more somatic complaints among girls. The problems identified by parents and teachers did not predominantly concern the same children. This has

to be taken into account in the case of screening on psycho-social problems.

Psycho-social health and life-events – dynamic development in the short term. A follow-up study of children at four and six years of age Chapter 7

In this study, (1) the psycho-social health in relation to (2) life-events was assessed among 156 children attending 20 schools by parents and teachers with the Child Behavior Checklist and the Caregiver-Teacher Report Form at the ages of four and six. Life-events were reported by parents. (1) According to the report, 93–96% children had no psycho-social problems. Parents and teachers reported significant improvement of externalising (behavioural) problems and total problems in children with psycho-social problems at point of time 1. Teachers also reported improvement of internalising (emotional) problems. Parents and teachers agreed in 8–25% of the cases. (2) Of the children 46% experienced life events, no correlation was found with changes in psycho-social health. Findings may be explained by regular school attendance, resilience of the children and variability in the normative development. Remarkable dynamic was observed in change of psycho-social problems. The results of this study show that psycho-social development in early childhood is rather liable to change and life-events do not strongly influence psycho-social health.

10 Samenvatting

Hoofdstuk 1

In de Algemene Inleiding (hoofdstuk 1) bespreken we twee punten van zorg over huidige ontwikkelingen: het eerste punt betreft de afnemende kennis van het belang van spelen en de tijd die beschikbaar is voor spelen. Het tweede punt betreft de psychosociale gezondheid van jonge kinderen. In zes studies onderzoeken en beschrijven we beide aandachtspunten (hoofdstukken 2 – 7). Meer specifiek onderzochten we de visie van leerkrachten met betrekking tot spel en psychosociale ontwikkeling (hoofdstuk 2); het vrije spel van kinderen in groep 1 en 2 (hoofdstukken 3 en 4); het spelen thuis in relatie tot psychosociale gezondheid (hoofdstuk 5); de psychosociale gezondheid van kinderen op vier- en zesjarige leeftijd volgens ouders en leerkrachten en de invloed van life-events in de tussenliggende periode op de psychosociale gezondheid (hoofdstukken 6 en 7).

Tevens definiëren en beschrijven we in de algemene inleiding de begrippen 'spel' en 'psychosociale gezondheid'. Spel blijkt moeilijk te definiëren omdat het een complex fenomeen is. De ontwikkeling van spelen, sociale participatie, de kwaliteit van spel en spelen thuis worden belicht. De discussie of het onderwijs aan jonge kinderen meer gericht moet zijn op schools leren of op ontwikkeling komt aan de orde evenals de verschillen tussen vrij spel, begeleid spel en voorgeschreven spel.

De definitie van psychosociale gezondheid heeft betrekking op de emotionele en sociale competenties van het individu om adequaat om te gaan met verschillende en moeilijke omstandigheden. Jonge kinderen ontwikkelen hun emotionele en sociale competenties in een dynamisch proces van interactie met hun ouders en hun omgeving.

Hoofdstuk 2

In de eerste studie verkenden we de visie van leerkrachten met betrekking tot psychosociale ontwikkeling en spel bij kinderen in de leeftijd van vier tot en met zes jaar. Psychosociale ontwikkeling is een belangrijk aandachtsgebied. Wanneer er op jonge leeftijd problemen ontstaan, blijven deze vaak gedurende de kinder- en jeugdjaren aanwezig. Ervaringen in de thuissituatie beïnvloeden het sociale en emotionele gedrag op school. Belangrijke factoren voor het wel of niet aanpassen aan de schoolsituatie zijn: aanleg (bijvoorbeeld temperament), sociaal gedrag (zoals empathie of agressie) en interactie (samenwerking of conflict). De school omgeving is de belangrijkste

plaats voor kinderen om ervaringen op te doen met leeftijdgenoten, om vrienden te maken en om deel te nemen aan groepsactiviteiten, zoals samen spelen. Volgens theorieën over spel kunnen kinderen sterke gevoelens uiten en dagelijkse ervaringen verwerken in het spel, daarnaast kunnen ze oefenen met verschillende rollen. Dus kinderen kunnen door spel belangrijke emotionele en sociale vaardigheden ontwikkelen. De meeste leerkrachten van jonge kinderen zijn zich bewust van hun taak om een gezonde sociale en emotionele ontwikkeling te bevorderen. Maar wat is hun visie op dit onderwerp?

In totaal 52 leerkrachten van 20 verschillende scholen werden geïnterviewd tijdens team bijeenkomsten. De interviews werden opgenomen en uitgeschreven. Vervolgens werden de interviews op een kwalitatieve wijze geanalyseerd door twee experts met behulp van een schema gebaseerd op theorieën over spel en psychosociale ontwikkeling. Acht kenmerken die karakteristiek zijn voor het spel werden onderscheiden: Spel is plezierig en vreugdevol, het heeft geen extrinsieke doeleinden (het gaat vooral om het proces en niet om het product), het is spontaan, het wordt bepaald door de spelers, het is niet letterlijk (het kan elementen van doen-alsof bevatten), het heeft een eigen realiteit, het is vrij van regels die van buitenaf opgelegd worden, het roept actieve betrokkenheid op (je kunt er helemaal in op gaan).
Er werden vier categorieën geformuleerd met een nadruk op sociale ontwikkeling: een persoon (een 'zelf') zijn tussen anderen, communicatie vaardigheden ontwikkelen, sociale cognitie ontwikkelen, leren door ervaring.
Uit de analyse van de interviews bleek dat bij de spel categorieën de categorieën 'doen-alsof', 'eigen realiteit', en 'vrij van buitenaf opgelegde regels' het meest frequent genoemd werden, dus volgens de leerkrachten belangrijke kenmerken van spel vertegenwoordigden. Met betrekking tot de sociale categorieën werd de categorie 'zelf en de ander' het meest genoemd, gevolgd door 'leren door ervaring', 'sociale cognitie' en 'communicatie vaardigheden'.

Uit de analyse bleek verder dat de leerkrachten de theoretische categorieën uitbreidden naar andere aspecten van de ontwikkeling. Zij beschreven spel en de bijdrage die spel levert aan de psychosociale ontwikkeling als een integraal proces. Dit betekent dat de voorwaarden om tot spel te komen (zoals een veilige en stimulerende omgeving), de bijdrage aan de unieke individuele ontwikkeling van het kind en de rol van de leerkracht inbegrepen zijn in dit proces. De geïnterviewde leerkrachten waren ervaren professionals, wier visie belangrijke inzichten oplevert met betrekking tot spelen en psychosociale ontwikkeling. De leerkrachten vatten spel hoofdzakelijk op als een vrije keuze activiteit, 'speelse instructie' werd niet genoemd in relatie tot psychosociale ontwikkeling. De resultaten van dit onderzoek kunnen bijdragen aan de discussie over spel en spelend leren.

Hoofdstuk 3

Het doel van het tweede onderzoek was het ontwikkelen van een instrument om het spelgedrag in de klas te observeren van een hele groep spelende kinderen in de leeftijd van vier tot en met zes jaar, op basis van video opname.
In de laatste 10 tot 15 jaar zijn er binnen het onderwijs aan vier- tot twaalfjarigen educatieve programma's ontwikkeld om de taalproblemen van allochtone kinderen in de grote steden en van kinderen met lage sociaaleconomische achtergrond te bestrijden. Het bevorderen van geletterdheid én gecijferdheid op jonge leeftijd is bedoeld om het niveau van de leerlingen te verhogen. Resulterend in een tendens om zo vroeg mogelijk met schools leren te beginnen. De tijd die besteed wordt aan vrije spel activiteiten neemt af, hoewel ontwikkelingspsychologen het belang van spelen voor de fysieke, cognitieve, emotionele en sociale ontwikkeling benadrukken. Bovendien zijn de huidige professionals in de voor-en vroegschoolse educatie vaak onvoldoende bekend met de ontwikkelingspsychologische aspecten van spel. Evenmin beschikken ze over adequate observatie instrumenten, omdat de meeste instrumenten op het individu gericht zijn en niet op de groep.
Daarom werd een nieuw observatie instrument ontwikkeld in samenwerking met ervaren leerkrachten en experts op het gebied van spel. Verscheidene vormen van spel werden geselecteerd en gecategoriseerd, op basis van geobserveerd spelgedrag in de klas en op literatuur over spel.

In totaal zeven categorieën werden geselecteerd als basis voor het observatie instrument;
Sensopathisch spel – exploratie en spel met materiaal zoals zand, water, deeg, klei.
Motorisch spel – activiteiten van fijne en grove motoriek, klimmen, glijden, stoeien.
Constructie spel – bouwen en construeren met behulp van blokken, kisten, planken.
Doen-alsof spel – fantasie spel met poppen, auto's, beestjes etc. en rollen spel.
Activiteiten zoals schilderen, tekenen, handwerken, schrijven, spelletjes op de PC etc.
Diversen zoals 'nog geen keus', kijken of wachten.
Niet zichtbaar – als kinderen op de gang of in een speelhuisje zijn.

Met behulp van het observatie instrument observeerden en codeerden drie verschillende groepen Bachelor studenten de spel activiteiten van ieder kind binnen tijdseenheden van vijf minuten. Dit kwam overeen met de video opname die gedurende de speeltijd (45 minuten) gemaakt was, waarbij de camera elke vijf minuten de hele klas in beeld bracht. De mate van overeenstemming in elke groep was bijna perfect. Dit betekent dat de observatoren de categorieën bijna op dezelfde wijze scoorden en dat het instrument betrouwbaar is.
Het instrument kan het observeren van de dynamiek van een hele groep spelende kinderen vereenvoudigen; het kan bijvoorbeeld gebruikt worden om te zien na hoeveel tijd kinderen overgaan tot een andere spelvorm, of wanneer ze hun interesse

verliezen (i.e. gecodeerd in de categorie diversen). Indien sommige spelvormen vaker geobserveerd worden dan andere, of het spel eenzijdig is, kan dit de vraag oproepen waarom dit gebeurt en of er actie ondernomen moet worden (als het instrument gebruikt wordt door leerkrachten). Bovendien kan het gebruik van het instrument observatie technieken verbeteren en kennis over spel bevorderen, in het bijzonder wanneer een heel team hetzelfde instrument gebruikt en de bevindingen bespreekt.

Hoofdstuk 4

In de derde studie observeerden we het vrije spel in de klas met een instrument gebaseerd op video analyse (zie hoofdstuk 3). In het vrije spel ondernemen kinderen verschillende activiteiten zoals sensopathisch spel, constructie spel, motorisch/ fysiek spel, doen-alsof/ fantasiespel en activiteiten zoals tekenen en andere spelletjes (kunst-en-tafelspelletjes). Uit literatuur over spel is gebleken dat bovengenoemde spelvormen bij dragen aan de fysieke, emotionele, sociale en cognitieve ontwikkeling. Samen met klasgenootjes of alleen wisselen kinderen regelmatig van spel activiteit.
We onderzochten welke verschillende spelvormen kinderen tijdens het vrije spel toonden en of er variatie in het spelen was. Tevens verwachtten we dat kinderen andere spel activiteiten zouden kiezen in grote groepen dan in kleine groepen.
Het vrije spel van 877 kinderen (afkomstig uit 47 klassen van 20 scholen) in de leeftijd van vier tot en met zes jaar werd op video vastgelegd. De video-opnamen werden geanalyseerd door getrainde Bachelor studenten met behulp van het observatie instrument (zie hoofdstuk 3).

Er was variatie in spelen, alle spelvormen kwamen aan bod. Het verloop van iedere spelvorm vertoonde een constante 'golf' met pieken en dalen, afhankelijk van de veranderingen in spelgedrag. Fantasiespel nam toe vanaf het begin van de speeltijd met een piek na twintig minuten. Kennelijk was er enige tijd voor nodig om in het fantasie spel te komen. Afgezien van een kleine daling, bleef de deelname aan fantasie spel het hoogst samen met kunst-en-tafelspelletjes. Constructie spel en sensopathisch spel vertoonden een geleidelijk verloop (i.e. tamelijk stabiel). Motorisch spel liet enige variatie zien met een piek na 25 minuten. In de 35e minuut was er een afname van motorisch spel terwijl er tezelfdertijd een piek in fantasiespel, kunst-en-tafelspelletjes en in de categorie 'niet-zichtbaar' waarneembaar was.
In kleine groepen (<16) werd significant meer motorisch en fantasie spel gespeeld dan in grote groepen (>21) en in grote groepen werden significant meer kunst-en-tafelspelletjes geobserveerd dan in kleine groepen, maar slechts in drie tijdseenheden van vijf minuten. Belangrijker wellicht dan de groepsgrootte is het gegeven dat het merendeel van de klassen heterogeen (leeftijden vier tot en met zes bij elkaar) was, hetgeen ook tot de variatie in spel bij kan dragen, in het bijzonder met betrekking tot fantasie spel.
De leerkrachten in de onderzoeksscholen waren ervaren leerkrachten. Om die reden

was er een diversiteit aan, door het kind geïnitieerd, spel te verwachten. Er is echter verder onderzoek nodig in scholen waar minder tijd besteed wordt aan spelen. De verwachting is dat wanneer er minder tijd ingeruimd is voor spelen, de emotionele, sociale en cognitieve competenties minder op een natuurlijke manier geoefend kunnen worden.

Hoofdstuk 5

In de vierde studie onderzochten we spel activiteiten thuis in relatie tot de psychosociale gezondheid van vierjarige jongens en meisjes. De ouders vulden vragenlijsten in over het spelgedrag en over de psychosociale ontwikkeling.
Spelen in de thuis situatie lijkt een gewone dagelijkse bezigheid voor jonge kinderen. Het is echter gebleken dat er in de VS te weinig tijd is om thuis te spelen vanwege een gehaaste levensstijl en doordat kinderen in de kinderopvang verblijven. In Nederland is een overeenkomstige tendens zichtbaar. Thuis spelen kan ook betekenen dat ouders met hun kinderen spelen, afhankelijk van hun sociale en culturele achtergrond. Spelen met vader of moeder heeft invloed op de in ontwikkeling zijnde genderrol van het kind. Tevens oefenen kinderen emotionele en sociale competenties in interactie met hun ouders en broertjes of zusjes.

Het meer specifieke doel van de studie was te onderzoeken wat jongens en meisjes thuis spelen en of er verschillen zijn in spelactiviteiten, in kwaliteit van het spel, concentratie en duur van het spel. Tevens werd het verband onderzocht tussen psychosociale gezondheid en spelvormen, algehele spelkwaliteit en samenspelen (zowel met leeftijdgenoten, ouders als broertjes en zusjes).
Uit het onderzoek bleek dat zowel vaders als moeders met hun kinderen speelden, en dus verschillende genderrollen aanboden. Verder kwam naar voren dat jongens meer betrokken waren bij motorisch spel en constructie spel terwijl meisjes meer betrokken waren bij fantasiespel en creatieve activiteiten. De kwaliteit en duur van het spel evenals de concentratie van zowel jongens als meisjes waren overwegend goed volgens de ouders.
Bij 95% van de meisjes en bij 97% van de jongens werden geen psychosociale problemen vermeld. Meisjes met een (sub)klinische score bij aandachtsproblemen speelden minder vaak samen met leeftijdgenoten en de kwaliteit van het spel was lager dan bij meisjes met een normale score. Een onverwacht resultaat was dat jongens met een (sub)klinische score op de schaal van totale problemen vaker samen speelden met anderen dan jongens met een score in het normale gebied. Deze bevinding zou verklaard kunnen worden door het soort activiteiten (motorisch spel en constructie spel) welke minder verbale interactie vragen dan bijvoorbeeld verbeeldend spel.
De bevinding dat jongens vaker motorisch spel kiezen komt overeen met studies over gender verschillen en lijkt op een belangrijk issue te wijzen. Als jongens voorkeur hebben voor motorisch spel, wordt daar dan thuis en op school voldoende aan

tegemoet gekomen? Motorisch spel vereist ruimte, zowel binnen als buiten, en enige tolerantie van de volwassenen met betrekking tot beweging en lawaai. In de huidige discussies over het gedrag van jongens wordt echter vaak naar voren gebracht dat jongens zich aan moeten passen aan vrouwelijke normen zoals een voorkeur voor verbale interactie.
In Nederland bestaat er op het moment een tekort aan mannelijke leerkrachten op de basisschool. Om die reden is er een campagne gestart om meer mannen te interesseren voor het vak van leerkracht. Recent werden enkele mannen geïnterviewd over hun keuze om leerkracht te worden op de basisschool. Hun belangrijkste overwegingen waren het bevorderen van motorisch spel voor jongens en het aanbieden van een mannelijk rol model.

Hoofdstuk 6

In de vijfde studie onderzochten we de psychosociale gezondheid van vierjarige jongens en meisjes bij hun intrede in de basisschool. Zowel de ouders als de leerkrachten vulden vragenlijsten in over het psychosociale gedrag van de kinderen.
Over het algemeen maken we bij probleem gedrag onderscheid tussen externaliserende problemen (agressie/aandachtsproblemen) en internaliserende problemen (angstig, teruggetrokken, depressieve klachten). Zowel probleem gedrag als co-morbiditeit van externaliserende en internaliserende problemen beïnvloeden het welzijn van het kind en laten een ongunstig verloop zien in het ontwikkelingsproces. De gevolgen van internaliserende en externaliserende problemen in de klas verschillen duidelijk: agressie naar klasgenootjes en leerkrachten vraagt veel aandacht en verstoort het klimaat in de klas terwijl men angstig, teruggetrokken of depressief gedrag vaak niet opmerkt.
De resultaten van het onderzoek zijn als volgt:
Met de meeste kinderen gaat het goed. Het percentage kinderen zonder problemen varieerde van 88% tot 98%. De variatie hing af van de informant (ouder of leerkracht) en het geslacht van het kind (jongen of meisje). Vergeleken met een epidemiologische studie zijn de percentages probleemgedrag in onze studie lager. Een mogelijke verklaring hiervoor is het opleidingsniveau van de ouders en de gezinssituatie die beide wijzen op een tamelijk lage risico groep.
Leerkrachten vermeldden significant meer externaliserende problemen bij meisjes en angstig/depressieve klachten bij jongens en meisjes dan ouders. Ouders rapporteerden meer somatische klachten bij meisjes dan leerkrachten. Een mogelijke verklaring hiervoor is dat leerkrachten het gedrag van de vierjarigen kunnen vergelijken met andere kinderen in hun klas, terwijl ouders het gedrag van hun kind zouden kunnen vergelijken met leeftijdgenootjes of broertjes en zusjes.
Belangrijk is, dat de observatie van angstig- depressieve klachten bij jongens overeenkomt met de nieuwste bevindingen van epidemiologische studies in Duitsland maar tamelijk nieuw is in vergelijking tot studies over jongens waarin men voornamelijk

externaliserende problemen noemt.
Een andere belangrijke bevinding is, dat de problemen die ouders en leerkrachten rapporteren voor het grootste deel niet dezelfde kinderen betreffen. Hier zou men rekening mee moeten houden bij de screening van psychosociale problemen.

Hoofdstuk 7

In de zesde studie onderzochten we de psychosociale gezondheid van kinderen op de leeftijd van vier en zes jaar in relatie tot life-events. Ouders en leerkrachten vulden vragenlijsten in over de psychosociale gezondheid respectievelijk met vier jaar en met zes jaar. Ouders rapporteerden over life-events in de tussenliggende periode. Life-events zijn: verhuizen, geboorte van broertje of zusje, scheiding, overlijden van naaste familie, ernstige ziekte of ziekenhuisopname van het kind of een familielid of verlies van werk van (één van) de ouders. Uit de resultaten van de follow-up studie bleek het volgende:
Op zesjarige leeftijd werden bij 93%-96% van de kinderen geen psychosociale problemen gevonden. Ouders en leerkrachten vermeldden significante verbeteringen van externaliserende (gedrags) problemen en van totale problemen bij kinderen die op vierjarige leeftijd psychosociale problemen hadden. Leerkrachten bemerkten verbetering van angstige of depressieve klachten, maar de ouders vermeldden geen enkele verbetering op dit gebied.
De belangrijkste verandering in de leeftijd van vier tot en met zes jaar is de transitie van voorschool of kinderdagverblijf naar de basisschool. De kwaliteit van de aanpassing aan de nieuwe situatie is cruciaal voor de verdere ontwikkeling en duidelijk verschillend voor jongens en meisjes.
Uit veranderingen in de individuele scores bleek dat psychosociale problemen kunnen ontstaan, maar ook weer kunnen verdwijnen binnen een tijdsverloop van twee jaar. Daarom is het belangrijk dat kinderen niet direct een etiket krijgen wanneer men problemen constateert.
Ouders en leerkrachten gaven in individuele gevallen niet dezelfde score, er was weinig overeenstemming. De laagste overeenstemming betrof 5% met betrekking tot verbetering van internaliserende problemen, de hoogste overeenstemming was 25% met betrekking tot verslechtering van totale problemen.
Kinderen met scores in het normale gebied, hadden vaker een opstapeling van life-events meegemaakt dan kinderen met een score in het (sub)klinische gebied. Er werd geen significant verband gevonden tussen de toename van psychosociale problemen en life-events.
De gezinnen uit de onderzoeksgroep wonen in middelgrote steden en er was sprake van een mix van lage, middel en hoge sociaaleconomische status. Beschermende factoren zoals opleidingsniveau en gezinssituatie kunnen het omgaan met life-events beïnvloeden; het gemiddelde opleidingsniveau van de ouders uit de onderzoeksgroep

is vrij hoog en 87% van de kinderen leeft in een twee-ouder gezin. Daarnaast zou de school een constante beschermende factor kunnen vormen. In de onderzoeksscholen wordt aandacht besteed aan vrij spelen, hetgeen de psychosociale gezondheid kan bevorderen. De dynamiek van de emotionele en sociale problemen toont aan dat het merendeel van de kinderen goed aangepast is aan de omstandigheden. De onderzoeksresultaten komen wat dat betreft overeen met recentere opvattingen waarin men psychosociale gezondheid meer als een dynamisch dan een statisch proces ziet.

Hoofdstuk 8 Algemene discussie en slotopmerkingen

Zes studies zijn verricht om de twee punten van zorg te onderzoeken die in de inleiding genoemd werden, te weten 1) spelen en de tijd die beschikbaar is voor spelen en 2) de psychosociale gezondheid van jonge kinderen.
We kunnen concluderen dat de kinderen uit de onderzoeksgroep zowel thuis als op school gevarieerd spelen en dat de kwaliteit van het spel thuis meestal hoog is. De leerkrachten zijn ervaren en vinden spelen belangrijk. Kinderen uit de onderzoeksgroep hebben minder psychosociale problemen dan kinderen in epidemiologische studies. Als er psychosociale problemen zijn, blijven deze niet altijd bestaan. Psychosociale problemen nemen niet doorslaggevend toe als kinderen life-events meemaken. Blijkbaar zijn er beschermende factoren zowel thuis als op school en de kinderen zouden meer veerkracht kunnen hebben dan kinderen uit andere studies.
Als resultaat van onze onderzoeken zouden we kunnen stellen dat spelen een beschermende factor is en dat de psychosociale gezondheid bevorderd wordt door spel.

De resultaten van de onderzoeken die in dit proefschrift beschreven staan geven aanleiding tot de volgende opmerkingen:
Een rijke spel omgeving en een diversiteit aan spelvormen waarin kinderen zich kunnen uitdrukken, bevordert de psychosociale ontwikkeling. Daarom is tijd om te spelen noodzakelijk in het curriculum voor jonge kinderen. Onervaren en toekomstige leerkrachten zouden enerzijds moeten weten wat jonge kinderen nodig hebben en anderzijds op de hoogte moeten zijn van het belang van spelen voor de ontwikkeling.
De informatie van zowel ouders als leerkrachten is belangrijk wanneer de psychosociale gezondheid van jonge kinderen beoordeeld wordt. In het bijzonder zou meer aandacht besteed moeten worden aan angstig – depressieve klachten bij jongens en meisjes omdat deze klachten vaak niet herkend worden.
Als kinderen gescreend worden op psychosociale problemen, is het belangrijk om er rekening mee te houden dat dankzij dynamische ontwikkelingsprocessen en de veerkracht van kinderen, problemen kunnen ontstaan maar ook vanzelf weer kunnen overgaan.

Dankwoord

"Als je de tocht aanvaardt naar Ithaka
wens dat de weg dan lang mag zijn,
vol avonturen, vol ervaringen."

Deze eerste drie regels uit het prachtige gedicht "Ithaka" van K.P. Kavafis geven precies aan wat ik gedurende mijn promotietraject ervaren heb- niet het aankomen is het belangrijkste, maar de weg er naar toe. En vol avonturen en ervaringen wás de reis: tegenwind, steile klippen, nieuwe horizonten, plezier en voldoening.

De bevlogenheid voor het jonge kind en de begeleiding van mijn promotor Prof. Dr. Sieneke Goorhuis-Brouwer waren inspirerend. Haar voorbeeld en opstelling zorgden daarnaast voor de broodnodige nuchterheid als ik me zorgen maakte over het verloop van het project. Dank je wel, Sieneke, dat je me op de wetenschappelijke weg begeleid hebt.
Dr. Maarten Dolk, begeleider van het eerste uur, werd helaas ernstig ziek en moest zijn taak overdragen. Gelukkig is hij aan de beterende hand. Met verve werd de begeleiding opgepakt door Dr. Joop Hoekman. Niet alleen deskundige op ons beider vakgebied, maar ook buurman op het moestuincomplex. Menig gesprek werd voortgezet tijdens het wieden van het onvermijdelijke zevenblad. Joop, veel dank voor je vriendelijk-kritische houding, je waardevolle adviezen, je kennis van de statistiek en altijd snelle feed-back.

Hogeschool Helicon stelde me in de gelegenheid om promotie onderzoek te doen in deeltijd, mede middels een subsidie van het Mobiliteitsfonds. De Ionastichting te Amsterdam wil ik van harte bedanken voor de financiële ondersteuning in de begin jaren.

Liesbeth Hoekstra en Pier Bergsma ben ik erkentelijk voor de hulp bij het werven van scholen.

Veel dank gaat uit naar de leerkrachten, kinderen en ouders van de onderzoeksscholen die ons toestonden om video-opnamen te maken in hun klassen. Deze opnamen zijn ook aan de scholen uitgereikt en op enkele scholen hebben we een ouderavond over spel georganiseerd. Dank ook aan de studenten van Hogeschool Helicon die de videoopnamen geanalyseerd hebben.
Hadewych Bakkers, je bent tweede auteur van het artikel over vrij spelen en gedurende het hele project heb je me op verschillende manieren bijgestaan, waar ik je dankbaar voor ben.
Heleen Bom en Joke van der Meij, experts op het gebied van spelen, jullie hebben als 'resonans groep' belangrijk werk gedaan door steeds kritisch commentaar te leveren en mee te werken aan de ontwikkeling van het observatie instrument. Ook de kleuterleidsters van de

Geert Groote school te Amsterdam, Ellen Baars, Ingrid Mos, Carla Langver, Charlotte de Bruin en Marijke de Groot hebben hier een belangrijke rol in gespeeld – letterlijk en figuurlijk!

Tijdens het promotietraject heb ik mijn werk als schoolpsycholoog bij de Begeleidingsdienst voor vrijescholen afgesloten, maar ik ben blij dat ik nu de uitkomst kan presenteren aan mijn geïnteresseerde oud- collega's, in het bijzonder aan Gerda Lubberdink en Ed Taylor.

Het doen van onderzoek naast het werk als docent op Hogeschool Helicon is een goede combinatie gebleken – mede dankzij de studenten en bemoedigende collega's Annemieke van der Horst-Brouwer, Jarla Geerts en anderen. Mijn huidige collega's van Hogeschool Leiden informeerden of het al opschoot – en nu is het klaar en kunnen we nieuwe stappen zetten.

Heel erg bedankt, Renske Vos, voor de zorgvuldige correctie van de Engelse teksten. Karel Berkhout, hartelijk dank voor de vormgeving van mijn proefschrift.

Het was (en is) heel belangrijk om te merken dat er zo veel mensen om je heen zijn die je steunen, bemoedigen en inspireren. Ik bedank Carsten Dominik voor de juiste vraag op het juiste moment, Wil van Benten voor haar interesse, maatjes van het A. Schönberg Kamerkoor, roei-genoten, leden van het academie clubje en vele anderen die hun betrokkenheid toonden.

Lieve familie en dierbaren, dank voor jullie vertrouwen. Mijn volwassen kinderen Laura, Elsje en Simon – jullie hebben mij ieder op je eigen wijze steeds aangevuurd en voor de vrolijke noot gezorgd! Dick, lieve reisgenoot, ik ben je dankbaar voor je relativeringsvermogen én voor je grote vertrouwen in het tot stand komen van dit proefschrift.

Curriculum Vitae

Louise Berkhout werd in 1952 geboren in Amsterdam. Zij volgde van 1972 tot 1975 de opleiding voor kunstzinnige therapie 'De Wervel' en studeerde daarnaast andragologie aan de Universiteit van Amsterdam. Door het kunstzinnig therapeutisch werken met kinderen op de Geert Groote school te Amsterdam en haar werk als projectleider van onderwijsinnovatie, stapte ze over naar de studie orthopedagogiek met bijvakken gezinsleer en medische sociologie. Ze volgde de postdoctorale opleiding kinderpsychopathologie en werkte van 1985-2007 als schoolpsycholoog (BIG geregistreerd) bij de Begeleidingsdienst voor vrijescholen. Daarnaast hield ze zich bij de Dienst bezig met het ontwikkelen van een leerlingvolgsysteem en kwalitatieve observatie instrumenten. Ze werkte van 2004-2006 mee aan het onderzoek in het Wilhelmina kinderziekenhuis te Utrecht naar de invloed van inbakeren, ritme en voorspelbare regelmaat bij baby's die excessief huilen. Van 2007 tot 2011 werkte ze op Hogeschool Helicon als docent ontwikkelingspsychologie en voerde het onderzoek uit dat uitmondde in dit proefschrift. Sinds 2011 werkt Louise als docent psychologie en psychopathologie op de afdeling kunstzinnige therapie van Hogeschool Leiden.