

# **Effects of Kanjertraining (Topper Training)**

**on Emotional Problems, Behavioural Problems  
and Classroom Climate**

Lilian Vliek

*“No one is born hating another person [...].  
People must learn to hate, and if they can learn to hate, they can be taught to love,  
for love comes more naturally to the human heart than its opposite.”*

- Nelson Mandela, Long Walk to Freedom

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Effects of Kanjertraining (Topper Training) on Emotional Problems,  
Behavioural Problems and Classroom Climate

Effecten van de Kanjertraining op Emotionele Problemen,  
Gedragsproblemen en Klassenklimaat  
(met een samenvatting in het Nederlands)

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Lilian Vliek

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Promotoren: Prof. dr. B. Orobio de Castro  
Prof. dr. G.J. Overbeek

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## Chapter 1

# General Introduction





Social interaction plays an important role in our lives from the very moment of birth. People long for social contact and support - two core human needs (Maslow, 1943). Problems in social interaction can therefore have a major impact on our lives. When children have difficulty engaging in social interactions, this can lead to conflict with peers and cause low social acceptance. Five to ten per cent of primary school children have problems being socially accepted by their peers (Boivin, 2005). Low social acceptance in turn may amplify children's problem behaviours (Coie, 2004). Early problem behaviours, in turn, are found to be important predictors of depression, delinquency, school dropout, and psychological disorders later in life (Romeo, Knapp, & Scott, 2006). Children experience the majority of their social interactions in school. A negative classroom climate - defined as a group dynamic that results in children feeling rejected by their classmates and disconnected from their teacher - increases the risk of problem behaviour and low academic achievement (Elias, 2003). Reducing difficulties in social interactions and negative classroom climate at an early age may prevent escalation into severe problems that are harder to treat (Van Lier, 2002) and save society from the associated costs and risks. Indeed, many studies have shown that preventive interventions at an early age can be particularly effective (for a review, see Nation et al., 2003).

Which programmes available in the Netherlands stimulate positive social interactions at an early age? In the Netherlands, interventions for young people are evaluated for their theoretical and empirical strength at the Database of Effective Youth Interventions, hosted by the Netherlands Youth Institute (DEI, 2015). Out of the 217 interventions in this database, only nine programmes are aimed at 4 to 12 year old children with psychosocial problems, have been shown to have a good theoretical framework, *and* provide good to strong indications for effectiveness. Of these nine interventions, only one is directed at internalising problems, namely anxiety disorders (De Dappere Kat), five are directed at externalising problems (Incredible Years, Alles Kidzzz, Behavioral Parent Training Groningen for children with ADHD, Minder Boos en Opstandig [Coping Power Program], Praten met kinderen), and two are universal prevention programmes aimed at achieving a positive classroom climate (Taakspel [based on Good Behavior Game] and PAD [PATHS]). Topper Training (Kanjertraining in Dutch) is the only one of these nine programmes with a universal, indicative, and classroom crisis intervention variant, that targets a broad population of children and adolescents aged between 4 and 15 year in and outside the school context. Topper Training is widely implemented in the Netherlands, but had not been tested for effectiveness until the present studies were conducted.

This dissertation focuses on Topper Training effectiveness. Topper Training is delivered in three settings:

- A school-wide universal preventive and curative programme to create or maintain a positive classroom climate, to reduce social problems, such as depressed mood and aggression, and to increase self-esteem in primary and secondary education, given by teachers while involving school policy and parents.
- An indicated prevention programme for socially disrupted classes in need of external help, in primary and secondary schools, given by psychologists. Teachers, parents, and the heads of schools are actively involved. The aim is to create a positive classroom climate and to reduce social problems, such as depressed mood and aggression, and to increase self-esteem and prosocial behaviour.
- An indicated preventive intervention for children with mild to severe psychosocial problems aimed at reducing emotional and behavioural problems and increasing self-esteem. Psychologists give the training in a mental healthcare centre to groups of children with diverse problems and their parents.

This dissertation specifically examines the effectiveness of Topper Training in the second and third setting: directed at socially disrupted classes in need of help and at children with mild to severe psychosocial problems in mental healthcare. These studies are the first to examine the effects of Topper Training.

### **Societal relevance of this dissertation**

Studying the effectiveness of Topper Training is relevant because this intervention is currently implemented in one out of every five schools and in about twenty mental healthcare centres in the Netherlands. So far, scientific research on the effectiveness of psychosocial interventions at schools has focused on interventions selected for implementation by scientists, with little implementation in the Netherlands. Even when such programmes work, it has proven difficult to implement them on a large scale, because they were not originally self-selected by schools (e.g. Dodge, 2011; Goossens et al., 2012). This dissertation focuses on Topper Training as an example intervention that was developed and implemented by teachers themselves on a large scale.

Additional relevance comes from a policy change currently taking place in the Netherlands called the 'Transition of youth care', through which the responsibility for youth mental healthcare has moved from national to local authorities. This policy also aims to change focus from curative to more preventive interventions. Thus, there is a need for one single programme that can be used both in schools and in mental healthcare settings. Research has found that interventions for

children with emotional and behavioural problems are indeed more effective when integrated across settings, such as school and home: involving the living environment, institutions and the child itself (Kutash, Duchnowski, Sumi, Rudo, & Harris, 2002; Greenberg, Domitrovich, & Bumbarger, 2001). Surprisingly, however, only few comprehensive interventions have been developed and evaluated that combine a school-wide prevention strategy with indicated or selected prevention and treatment (see Greenberg, Domitrovich, & Bumbarger, 2001). This is why in the current dissertation we study Topper Training, as an example of an intervention that is implemented in both schools and mental healthcare centres.

### **Opportunities and room for improvement**

Although an increasing number of school-based prevention programmes for social problems in children have demonstrated efficacy, effect sizes are generally found to be modest (Wilson & Lipsey, 2007). Importantly, these modest estimates of effect sizes may actually be too positive, as most programmes have been tested for efficacy in highly controlled research trials only; comparatively few interventions have been tested for effectiveness in the real-world conditions under which they are generally used. In a meta-analysis, only 32 out of 249 studies on the effects of school-based interventions for aggressive and disruptive behaviour actually concerned a test of effectiveness in routine practice (Wilson and Lipsey, 2007). This is crucial, because effectiveness trials generally deliver less favourable results than efficacy trials (e.g. Van der Lem, Van der Wee, Van Veen, & Zitman, 2012). Moreover, it is important to test the actual effectiveness of programmes that are already being used on a large scale (Dodge, 2011).

Little is known about the effects of cognitive behavioural interventions on classroom climate, since most studies only examined the effects on individual children in classrooms (e.g. Salmivalli & Poskiparta, 2012; for a review see Wilson and Lipsey, 2007). It is, however, important to study the effectiveness of interventions on classroom climate as well, since this phenomenon is more than the sum of its parts. For example, anxiety and peer rejection are related to victimisation in classrooms, but only in a classroom climate where reinforcement of these behaviours by peers is common (Kärnä, Voeten, Poskiparta, & Salmivalli, 2010). Accordingly, improving the relationships between classmates and also between the teacher and students has been found to reduce peer victimisation for individual children (Smith, Ananiadou & Cowie, 2003).

With the current studies, we aim to overcome the aforementioned limitations of earlier studies by studying the effectiveness of Topper Training in routine daily practice, while at the same time measuring classroom climate (in the school setting) as an outcome variable in addition to individual outcome measurements.

## Topper Training

Topper Training is one of the most widely disseminated programmes on social emotional development and bullying in the Netherlands (DEI, 2015). The Dutch word 'Kanjer' (in Kanjertraining) does not have a direct translation into English, but means something like a champion/hero/tiger/topper. Kanjertraining was originally translated into TIGER (Training I Go for Emotional well-being and Respect). Later on, Toppertraining Foundation translated all materials of the method, and the word 'Topper' was chosen for 'Kanjer': hence, the method was called Topper Training in English. In the intervention, a 'Topper' is someone who is authentic, trustworthy, socially competent and respectful to others and him/herself. A 'Topper' has a constructive coping strategy: he/she searches for respectful solutions on the basis of equality.

The intervention was first developed in 1996 by a psychologist and former primary school teacher (Topper Training Foundation, 2007a). He based the training on his experiences with children in primary and secondary school classes and was inspired by typical 'Toppers' such as Nelson Mandela and Ghandi. Topper Training is a multimodal method that includes prescribed lessons and directions for pedagogic action, school policy and parental involvement. The programme focuses on the attitudes and behaviour of children, educators, the head of the school and parents. In this dissertation, the training is described extensively in Chapter 2. Variants of the Topper Training method to create positive group climates are also widely used in sports associations, out-of-school childcare, churches and entire neighbourhoods. These variants were not studied in this dissertation.

## Aims and research questions

The aim of this dissertation was threefold. First, we wanted to examine whether the theoretical basis of Topper Training is supported by current scientific knowledge. Subsequently, we aimed to develop and evaluate the 'Topper questionnaire', which was specifically designed to monitor the social functioning of children in a classroom setting. The third and main aim was to examine the effectiveness of Topper Training. Since the programme is comprehensive - involving programme aspects for children,

peers, teachers, parents and the head of the school - we deemed it prudent to start the research project by 'simply' examining whether the total programme resulted in positive effects on children and classroom climate. We tested this in settings where experienced psychologists routinely delivered the programme. In the current studies, all empirical data were collected in routine daily practice: the researchers were not involved in the development or implementation of the intervention at the study sites.

Chapter	Type of study	Design	Setting	Participants	Sample size
2	Literature review				
3	Psychometric study		Primary school	Primary school children aged 8-13 in the Netherlands	10,552 children
4	Effect study	Quasi-experimental	Primary school	Classes with social problems in need of help, grades 3-6 (aged 8-13)	28 classes with 696 children
5	Effect study	Quasi-experimental	Mental healthcare centre	Children aged 8-11 with psychosocial problems and their parents	224 children
6	Effect study	Randomised controlled trial	Mental healthcare centre	Children aged 8-11 with psychosocial problems and their parents	132 children

Table 1.1 Characteristics of the studies included in this thesis

The dissertation consists of one literature study and four empirical studies. Characteristics of the studies are summarised in Table 1.1 and concern the following research questions:

**Theoretical framework**

1. *On which factors should preventive interventions focus in order to stimulate positive social interactions in primary school children? Do Topper Training principles build on these key intervention factors? (Chapter 2)*

**Psychometric evaluation**

2. *What are the psychometric qualities of the Topper questionnaire with regard to reliability, validity and normative data? (Chapter 3)*

**Effectiveness**

3. *What are the effects of Topper Training on classroom climate, self-esteem, depressed mood, aggression and prosocial behaviour in disruptive primary school classes in need of help? And for which classes is Topper Training most effective? (Chapter 4)*
4. *Does Topper Training reduce parent-reported internalising and externalising problems in children with mild to severe problems in social interactions in a mental healthcare setting? And for whom is Topper Training most effective? (Chapter 5)*
5. *What are the effects of Topper Training, studied in a randomised controlled trial, on psychosocial problems, self-reported victimisation, bullying and self-esteem in children with mild to severe psychosocial problems in a mental healthcare centre? Do the effects of Topper Training persist over a 6-month period? (Chapter 6)*

Finally, Chapter 7 contains a general discussion of the results, describes practical and theoretical implications of the thesis and provides future study ideas.

## Chapter 2

# How to Stimulate Positive Social Interaction? The Theoretical Basis of Topper Training

Based on the publications:

Vliek, L. & Orobio de Castro, B. (2010). Stimulating positive social interaction: What can we learn from TIGER (Kanjertaining)? In B. Doll, J. Baker, B. Pfohl en J. Yoon (red.). *Handbook of Youth Prevention Science*. New York: Routledge.

Vliek, L. (2013). *Databank Effectieve Jeugdinterventies: beschrijving 'Kanjertaining'*. [Database Effective Youth Interventions: description 'Topper Training'] Utrecht: Nederlands Jeugdinstituut. <http://www.nji.nl/nl/Databanken/Databank-Effectieve-Jeugdinterventies/Erkende-interventies-Kanjertaining>





Interventions directed at general risk and protective factors for multiple social problems are found to be more effective than those directed at specific problem behaviours (Greenberg, Domitrovich, & Bumbarger, 2001). The reason for this may be that general processes may be responsible for a multitude of both internalising and externalising behaviour problems (Caspi et al. 2014). Below, we specify which factors preventive interventions should focus on in order to stimulate positive social interaction in primary school children. Children and their environment are in continuous interaction with each other. Child behaviour influences reactions from their environment, which in turn triggers certain child reactions. This may result in a cycle of positive or negative behaviour by the child and the environment (see Rutter, 2006). Thus, the child can create an environment that increases its problem behaviour and the environment can further contribute to the pathological development of a child who makes the environment more problematic, though neither the child nor specific agents in the environment may have any intention to do so. As the contribution of interacting factors is extremely complex, for the sake of clarity these factors are discussed separately below. These risk and protective factors need not necessarily be causal factors. Both the factors and the behaviour of the child can be the result of other (possibly unknown) factors. Moreover, each factor that will be discussed has very little predictive value by itself. Only the combined action of these factors indicates an increased risk. Importantly, we only discuss factors that may be mendable to change through intervention. This list of factors is certainly not complete but it does provide an overview of the factors identified in the literature as crucial factors impinging on the social-emotional development of children. The factors are divided up in two types: relational factors (including peer, parent and teacher influences) and child factors (including social skills, social information processing, emotion regulation, and self-esteem).

## **Relational factors**

### **Peers**

Several research findings provide reasons for treating social problems in a group of children with both internalising and externalising problems together. Firstly, social behaviour is mostly manifested in group interactions, which makes it advisable to treat those problems in a group with several social roles/behaviours (Salmivalli, 1999). More specifically, eliminating bystander reinforcement was effective in improving social relations between children and in improving children's behavioural patterns (Salmivalli et al., 2011). Secondly, children learn their

social skills primarily from each other (Verheij, 2005). Children should therefore not be placed in a group with externalising children only, but with a mixture of children with internalising problems and children with externalising problems so that they can learn from each other.

Another relevant phenomenon that requires a peer group intervention is the perceived social status in a group. Research has shown that aggressive children often misinterpret their dominance in a group as popularity (Orobio de Castro, Brendgen, Van Boxtel, Vitaro & Schaepers, 2007). This bolsters their dominant behaviour. Insights into their actual social acceptance by peers may reduce their dominant behaviour.

### **Parents and teachers**

When parents show emotional involvement, affection and support, children show more prosocial behaviour and have higher self-esteem in social contact (Rudolph and Asher, 2000). Precursors for aggressive behaviour are harsh and physical punishment, inconsistent use of rules and little monitoring (see Rutter, 2006). Reactive aggression (impulsive reactions to perceived threat, with high emotional arousal) is specifically associated with harsh or neglectful parenting. Proactive aggression (premeditated and directed aggressive behaviour) is associated with aggressive role models in the family who use aggression as a way of achieving their personal goals (see Rutter, 2006). Anxious behaviour in a child is associated with anxious parenting, parental overcontrol, and rejection. In addition to these parenting influences, parents also represent a model for their children's social behaviour: children have a tendency to copy their parent's behaviour (Bandura, 1986). Additionally, parental ideas about aggression in school have an influence on the behaviour of the child in the classroom. When parents preferred fighting above a nonviolent reaction to resolve a conflict, students were found to be more aggressive (Farrell, Henry, Mays & Schoeny, 2011).

Teachers also act as role models for children. Teachers who themselves show positive behaviour contribute to the development of positive behaviour in their students. Additionally, the teacher's expectation of the child's behaviour and performances is of great importance; low expectations reduce a teacher's level of interest and investment in the child and influences the child's behaviour and performance negatively (Good & Brophy, 1978). Moreover, research has established that the quality of teacher-student interactions and the instructional practices that take place within the classroom are two important predictors of student academic performance and social adjustment (Hamre & Pianta, 2007; Mashburn & Pianta, 2006). Thus, there is ample evidence that effective interventions should involve peers, teachers, and parents together.

## Child factors

### Social skills

Social problems can develop as a result of deficits in social skills (Epstein, Atkins, Cullinan, Kutash & Weaver, 2008). Children reduced their aggressive and rebellious behaviour when they learned other socially accepted behaviours through which they could reach their goals. Teaching effective coping strategies also contributed to a decline in anxious behaviour in children (Kazdin, 2003). Given that children learn their social skills primarily from each other (Verheij, 2005) and that social problems often manifest themselves in peer group interactions, social skills are best practiced in a peer group (Salmivalli, 1999).

### Social information processing

According to theories of social information processing (Dodge, 1986; Crick & Dodge, 1994), the social behaviour of people in similar situations varies because people process social information differently. People can pay attention to different information than others do and can interpret this selective information in a different way. This causes emotions and reactions to vary between people. According to Crick and Dodge (1994), social information processing contains six steps: encoding of information; interpretation of this information; development of an emotion; generation of a reaction or several reactions; selection of the reaction with the highest expected benefit; and execution of the reaction. Problem behaviour develops, according to Dodge, when one or more steps are performed atypically. In many studies, it has been found that certain types of social information processing are related to specific forms of aggressive behaviour (see Dodge, 2006; Orobio de Castro, Merk, Koops, Veerman, & Bosch, 2005). Aggressive children are often found to perceive information as threatening and to interpret the reactions of others as hostile. Moreover, they more often believe that an aggressive reaction will be beneficial. Children who feel shy and depressed have also been found to interpret the reactions of others in a hostile way. However, these children do not generate aggressive reactions but resort instead to withdrawal (Quiggle, Garber, Panak & Dodge, 1992).

As part of the fifth step (response evaluation), self-efficacy is thought to play an important role. Self-efficacy refers to one's own judgment on being able to perform the behaviour (Bandura, 1994). It has been found that aggressive and shy children think that they are not able to perform the more socially adequate types of behaviour. They realise that aggression and shyness are not the best reactions, but they expect only to be able to show aggressive or shy behaviour. Training children in social information processing was found to be an effective method for reducing aggression, even though effect sizes tend to be modest (for a meta-analytic review, see Wilson & Lipsey, 2006).

**Emotion regulation**

Emotion regulation influences many competencies that allow children to modulate and cope with strong emotional states. Relevant competencies include internalised coping mechanisms (e.g., calming self-talk, cognitive strategies to reframe upsetting events), attentional control (e.g., shifting attention from provocative stimuli) and instrumental behavioural strategies (e.g. behaviours that alter emotion-provoking situations). Research has consistently shown that deficits in emotion regulation are predictive of reactive aggression, rejection, exclusion and bullying by peers (Eisenberg, Fabes, Murphy, Maszk, Smith, & Karbon, 1995; Pope & Bierman, 1999; Shields & Cicchetti, 1998).

**Realistic self-esteem**

For a long time, the relationship between self-esteem and behaviour was unclear. Many researchers assumed that aggressive people had low self-esteem, but a long history of research and theories does not support that notion. Salmivalli (2001) discusses the relationship between self-esteem and behaviour and concludes that 'high' or 'low' self-esteem is not enough to describe this relationship. Instead, the "narcissistic" or "defensive" self-view is found to be associated with problem behaviour. Narcissism, as a personality trait, indicates people's striving to feel superior to others. A defensive self-view refers to 'not being open for criticism'. Salmivalli, Kaukiainen, Kaistaniemi and Lagerspetz (1999) showed that adolescents could be divided into three groups: the group with high self-esteem in combination with high narcissism often bullied others; the group with low self-esteem and low narcissism was often bullied; and the group with high self-esteem and low narcissism showed mostly prosocial behaviour (Salmivalli et al., 1999). Similar findings were found for children between 10 and 13 years old. Thomaes (2007) studied the reaction of narcissistic and non-narcissistic children in shameful situations. The results showed that narcissistic children with high self-esteem displayed the highest levels of aggression. Low self-esteem proved to be a protective factor with regard to the development of aggression in narcissistic children.

Kernis (2003) gives a definition of optimal self-esteem in which choice-making by the authentic self contributes to optimal self-esteem. She states: "Optimal self-esteem involves favourable feelings of self-worth that arise naturally from successfully dealing with life challenges; the operation of one's core, true authentic self as a source of input to behavioural choices; and relationships in which one is valued for who one is and not for what one achieves" (p.13). In line with this theoretical notion, findings from Thomaes, Reijntjes, Orobio de Castro and Bushman (2009) showed that children with realistic self-views

were least vulnerable to social rejection, whereas children with overly positive or overly negative self-views suffered the most emotional distress in response to social rejection. Thus, optimal self-esteem appears to be a combination of knowing and accepting one's strengths and weaknesses.

Recommended factors to be incorporated into an intervention on positive social interaction are summarised in the first part of Table 2.1.

### **How does Topper Training aim to stimulate positive social interactions?**

Topper Training is based on cognitive behavioural theory in which parents, teachers, school and peer groups are all actively involved. In his meta-study, Carr (2001) concludes that the most effective way to tackle children's social problems involves the use of a combination of behavioural therapy techniques with cognitive elements, acting out concrete problematic social situations in a group with the children's peers and a corresponding form of parent training. This specified combination is an important fundament for Topper Training.

Although the working theory of Topper Training is the same across the educational and mental healthcare spheres (Topper Training Foundation, 2007), one main difference is that in the classroom situation the classmates, teachers and school policy are involved, while in the mental healthcare profession the social context of a child is involved through the parents. At mental healthcare centres, the children are trained in groups in which various behavioural problems are brought together so that they can learn from each other and act out different situations with each other. The children who follow the training at mental healthcare centres are, in essence, not different from the children who do so at school: these children usually do not meet criteria for a specific psychological disorder but rather have a heightened level of psychosocial problems. The assumption for all target populations is that children will behave more prosocially when they become more aware of their own behaviour, of how that behaviour affects others and of their own true intentions. Subsequently, children learn that they can choose the way in which they behave. This 'model', involving knowledge, ability, desire and choice, also applies to parents, teachers and school heads. The programme aims to achieve that they all become more aware of their own behaviour and learn how to actively choose to behave like a 'topper'. Below we describe how Topper Training intervenes on the influencing factors described above.

**Peers**

The programme is provided as a group training. Many of the exercises focus on the contact and levels of trust between children who normally would not associate with each other very frequently. This reduces the risk of reinforcing problematic behaviour that arises when only those children who share a common problem are placed in a group together (see Rutter, 2006). Topper Training involves exercises in which children are taught not to laugh at behaviour that they actually find very irritating. This 'engine and gas' exercise breaks through the reinforcement of negative behaviour. Also, because some children believe, albeit mistakenly, that they can raise their popularity in the classroom by displaying aggressive behaviour (Orobio de Castro et al., 2007), Topper Training enables children to become more aware of what peers actually think of their behaviour through the use of visual sociograms. This is done by getting classmates to give each other feedback. The child receives concrete tips from his/her classmates, which they can then use to place him/herself in a better light within the group and find the motivation to behave in a more social manner. This allows the children to show that they do not approve of that child's behaviour and that the child must take responsibility for his/her own behaviour.

**Parents and teachers**

Topper Training acknowledges that parents, teachers and school policy all impact on a child's behaviour and development. Those closest to the child can stimulate positive social interaction in two ways: by functioning as role models and by supporting the child's adequate social behaviour through giving feedback, behaving authoritatively and setting and maintaining limits. Parents and teachers are trained in how to engage in socially acceptable behaviour. During the training, parents become cognisant of the basic idea behind Topper Training: that children have a desire to behave well, but sometimes they just do not know how. They learn how to see their child in a more positive light so as to transfer positive expectations, which in turn make children more aware of their intrinsic motivation to display prosocial behaviour and thus be more likely to put it into practice. In school, the teacher and the parents have a shared responsibility for the behaviour of a child in class. A parent evening is held before the training commences. When a psychologist delivers the training in a troublesome class, parental involvement is a crucial element of the training. In addition to the lessons that are given to the children in class, the school, the teacher and the psychologist set out clear rules as to which kinds of behaviour will be tolerated in school and which will not. Parents are informed that if their child misbehaves, or has the intention to do so, then they are obliged to come to the school.

### **Social skills, social information processing and emotion regulation**

The main method that is used to foster children's understanding and skills in social interactions is the use of four caps and five Topper principles.

The principles are used as guidelines for behaviour and are displayed on a poster. These are: We trust each other; We help each other; Nobody bosses others around; Nobody laughs at others; and Nobody behaves like a victim. The four caps represent four different types of behaviours or coping strategies. Children learn to recognise and become conscious of and skilled in these four types of behaviour. The black cap (called the Bullybird) stands for aggressive and dominating behaviour; the yellow cap (the Rabbit) stands for shy, anxious and depressed behaviour; the red cap (the Monkey) stands for annoyingly funny, careless and 'accomplice-like' behaviour; and the white cap (the Tiger) stands for authentic social behaviour that embodies respect for oneself and for others. The latter is called Tiger or Topper behaviour and it includes constructive socially competent behaviour, expressing one's opinion in a respectful way, sharing one's feelings, helping others and being trustworthy.

A key point is that while children may behave like a certain cap, they are not identified as such. The cap refers to behaviour, not to a personal trait. Moreover, when the coloured caps are combined with the white cap, all positive aspects of the caps become visible. The caps in combination with the white cap cover many ways in which people feel authentic. The black cap with the white cap represents power, leadership, initiative taking, spirit. As long as people have respect for themselves and the other, this behaviour is seen as Topper behaviour. When respect for the self becomes more than respect for the other, this becomes black cap behaviour. In the same way, the yellow with white cap represents modesty and being sensitive to others needs and feelings. The combination of red and white cap represents humour (with respect for all parties) and being able to relativize.

Social (Topper) skills (e.g. presenting oneself, talking about feelings, giving and receiving feedback) are practised and repeated during each lesson in order to automate these skills. Difficult situations are acted out in role-plays, for example bullying situations that have arisen in the class. The caps can also be used outside the training sessions: children, teachers and parents can ask children "Which cap are you wearing?" so as to make children more conscious of their behaviour. Subsequently, they can ask the child whether he/she would like to put on the white cap. Children learn that the four types of behaviours often go together with certain ideas about oneself and the other. These ideas and other themes are discussed in the training (e.g. 'What is friendship?' and 'Where do you want to fit in?') so that children can learn to change their thinking on social interaction, which will lead to a change in their way of processing social information.

Research has shown that practising social skills can be an effective method when it comes to helping both socially withdrawn and aggressive children, and that the former group actually benefits twice as much from the training than the latter (for an overview see Prins, 2001). The generalisation of practising social skills alone is insufficient. An effective generalisation can only be achieved by making extensive use of behavioural training, for example through operant techniques, modelling and coaching. Prins (2001) also emphasises the point that in many typical social skills training programmes, not enough attention is paid to the motivation of the child to change their behaviour. Given that Topper Training actively coaches the child, the parents, the teacher and the whole class in these skills, a better generalisation can be expected to arise than when the focus is on training social skills alone.

### **Self-esteem and respect for others**

According to Topper Training (Topper Training Foundation, 2007), self-esteem in combination with respect for others is important in the development of social behaviour. As social behaviour concerns the interaction between oneself and the other, it is considered important that the child shows respect for both parties. Topper Training assumes that low self-esteem in combination with high respect for others will lead to feelings of inferiority and will contribute to internalising behaviour. On the other hand, a high level of self-esteem (or sometimes an inflated ego) in combination with low respect for others can lead to feelings of superiority and power and can easily result in aggressive behaviour towards others (who are 'worthless'). Children who have a balanced sense of self-esteem and respect for others will tend to show respectful social behaviour in which both parties (self and other) are respected for who they are. These assumptions are in accordance with the studies of Salmivelli and colleagues (1999) and Thomaes (2007), wherein an imbalance between regard for oneself and regard for others is seen as highly problematic. One of the lessons addresses the theme "Is it okay that you are here?" Children learn that it is good that they exist, not because of their achievements but because they are loved by people around them. This is comparable to the view of Kernis (2003): "Optimal self-esteem involves [...] relationships in which one is valued for who one is and not for what one achieves" (p.13). Moreover, Topper Training stimulates children to make authentic choices: to live according to their desires to be social. This will increase their feeling of being unique people, which will increase their self-esteem. This is also comparable to the view of Kernis (2003): "Optimal self-esteem involves [...] the operation of one's core, true authentic self as a source of input to behavioral choices" (p.13).



<p><b>Relational factors</b></p> <ol style="list-style-type: none"> <li>1. Involve peers with diverse problems in the intervention. Give dominant children insight into their actual popularity. Diminish reinforcement of negative behaviour.</li> <li>2. Train parents in their way of interacting with the child. It seems useful to promote emotional involvement, affection, support and consistent use of rules, and to discourage physical and heavy punishment, neglectful rearing, aggressive parental behaviour, anxious rearing, too much parental control and rejection.</li> <li>3. Teach parents and teachers to set a good example as role models</li> <li>4. In school: parental ideas about aggression</li> <li>5. Stimulate positive relationships with teachers and stimulate teachers' high expectations of children</li> </ol>
<p><b>Child factors</b></p> <ol style="list-style-type: none"> <li>6. Practice social skills in a peer group</li> <li>7. Train children in social information processing</li> <li>8. Strengthen self-efficacy</li> <li>9. Train children in emotion regulation</li> <li>10. Stimulate realistic self-esteem in combination with respect for others (non-narcissistic)</li> </ol>
<p><b>Authentic desire and feeling of responsibility</b> (recommended and used by Topper Training)</p> <ol style="list-style-type: none"> <li>11. Remind children of their authentic desire, their positive intentions. Ask them how they want to behave and use this as a guideline when stimulating the child to behave in that way.</li> <li>12. Make children responsible for their behaviour and teach them that they can choose how to behave (at a developmentally appropriate level).</li> </ol>

Table 2.1 Recommended factors to be incorporated into preventive interventions to stimulate positive social interactions

In addition, children talk with each other in the training and share opinions in order to stimulate respect for others and their opinions. The motto here is: unknown means unloved. Physical exercises are used to bolster trust within the group and to teach the children how to physically interact with each other in a respectful way instead of hitting and kicking each other.

In addition to the social and individual risk and protective factors reviewed above, Topper Training proposes that two future-focused elements are also essential (described in the second half of Table 2.1) (Topper Training Foundation, 2007).

**Authenticity: to live according to one's desire**

In Topper Training, problematic behaviour (internalising and externalising behaviour) is seen as non-authentic behaviour (Topper Training Foundation, 2007). To live authentically is defined as: to live according to one's desire. Topper Training sees authentic behaviour as crucial to the development of the self, and hence to the development of well-being and self-esteem. According to Topper Training, when people manage to live according to their desires, they can achieve their personal goals, which will make them happy. Moreover, making authentic choices in one's life will increase the feeling of being a unique person, which will bolster the authenticity of their self-esteem. What does Topper Training mean by 'living according to one's desires'? The 'desire' in Topper Training alludes to a fundamental kind of desire. Irrespective of origin, culture, religion or experiences, most people share the universal desire to belong: to be a good mother or father, a good student, a good friend or a good son or daughter. Most people have the desire to be trustworthy. According to Topper Training the majority of children share this desire too. They wish to feel accepted as a good son or daughter, a good friend and/or a good student. Reality is that children - and adults too - do not always manage to live according to their desire. They show withdrawal, shyness and/or anxiety; others resort to aggression; and others simply give up, become careless or indifferent or do not take themselves or others seriously. Topper Training assumes that in all of these cases people are not living according to their desires: they do not really want to behave like this. This proposed desire to behave authentically is an essential starting point for the training. Children are reminded of their desires or their positive intentions. This is assumed to enhance intrinsic motivation to behave prosocially.

This idea is in line with Kernis' (2003) idea of the operation of one's core, true authentic self as a source of input to behavioural choices. More research is needed to test this assumption empirically.

**Responsibility**

Another theoretical basis of Topper Training lies in taking responsibility. Topper Training is based on the premise that people are responsible for their own behaviour. This also holds for children (at a developmentally appropriate level). Topper Training assumes that children can choose how they behave. According to Topper training, children are not the product of their environment, but have control over their lives and are able to make autonomous choices. In the intervention, children learn to jettison their feeling of being a victim. Many children who are bullied, shy and anxious have these feelings of helplessness. They think: "I don't have any influence on anything; this always just happens to me". Remarkably, many aggressive

children also have these feelings: "Why do they always blame me? I am a victim of the rules". According to Topper Training, both groups of children need to learn to take responsibility for their own behaviour. The lessons are sequenced so that children gradually learn that they can choose their own behaviour. This is illustrated by the use of the caps: one can choose to wear a different cap; a child is not a cap, but behaves like a cap. Moreover, the trainer or teacher always let children choose whether they want to participate in an exercise or not, so that the children can develop feelings of control in these situations. The last Topper principle: 'Nobody behaves like a victim' means that despite bad circumstances, people can always choose how to deal with or react to particular situations.

With parents, Topper Training translates this principle into a method that prevents parents from resorting to excuses like: "My child misbehaves in school, but that's because he is dyslectic/has ADHD/his father is in jail." These factors may indeed have an influence on the child, but they may not be used as an excuse for rule-breaking behaviour. This means that Topper Training assumes that, although it may be important to know how many problems a child has, how bad the child's environment is, or which stressful life-events he/she has been subjected to, it is primarily important, what a child wants to do about the situation. How does the child want to deal with difficulties in life? The assumption is that even a toddler without any social skills, with aggressive peers and with neglectful parents may still have the choice between using a shovel to dig a hole in the sand or using it to hit another child.

Remarkably, in developmental psychology literature and in interventions, the concepts of authenticity and responsibility of children have received little attention. In their groundbreaking theories, however, Piaget and Vygotsky already emphasised the importance of an active constructive role on the part of children themselves in their own development. However, many theoretical models nowadays are constructed on the - often implicit - premise that children do not have any choice in how they behave, as if their behaviour is the sum of external factors only that subsequently determine how they behave.

Although not much attention has been given to the ideas of authentic desires and responsibility, research guided by Self-Determination Theory (Ryan & Deci, 2000; Deci & Ryan, 2012) has focused on the social-contextual conditions that enhance versus diminish the natural processes of intrinsic motivation and well-being. Results of this research showed that the support of two human needs - autonomy and competence - reliably facilitated the 'natural activity and curiosity referred to as intrinsic motivation' (Ryan & Deci, 2000, p. 76). Also in the case of nonintrinsically motivated behaviours, the support of autonomy, competence and relatedness were found to foster greater internalization and integration of social values and responsibilities.

As a prerequisite for taking responsibility, Dweck (2006) and Dweck, Chiu and Hong (1995) have specified the importance of self-theories on social and academic resilience - whether students respond positively to challenges. An implicit self-theory that personality is unchangeable can lead to interpret peer victimisation or exclusion as something that cannot change (Yeager, Trzesniewski, Tirri, Nokelainen, & Dweck, 2011). People with such an 'entity view' on social ability or intelligence are susceptible to learned helplessness because they feel that circumstances are outside their control. An incremental view, on the contrary, creates motivation to work harder. Experimental studies with students have demonstrated that relatively small cognitive interventions targeting a 'growth mindset' can lower aggression and stress in response to peer victimization and result in enhanced academic performance (Yeager & Dweck, 2012). The method of Topper Training by which caps represent types of behaviours that can be changed and are not fixed, may contribute to an incremental view on social behaviour.

## Concluding remarks

In this chapter, we described the risk and protective factors in the development of positive social interactions of children. Topper Training takes into account most of these risk and protective factors, and is thus characterized by an active involvement of peers, parents and teachers in the intervention, by focusing on children's social information processing, their social skills, emotion regulation, self-esteem and respect for others. Importantly, Topper Training also is based on two additional factors: the universal desire of children to behave authentically, and their sense of responsibility. The studies described in the following chapters examine whether Topper Training actually changes self-esteem and social behaviour in children. Such research on the effectiveness of Topper Training might contribute to the knowledge of influencing factors in positive social interactions.

## Chapter 3

# Psychometric quality of the Topper questionnaire: reliability, validity and normative data

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Lilian Vliek reports a conflict of interest, as a psychologist at the Topper Training Foundation. She does not have any financial interest in the outcomes of the study. Data are available upon request.



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*Careful monitoring of children's social and academic development has been found to contribute to positive development, as it focuses teachers and caregivers on children's functioning and facilitates adequate responses if problems in development occur (Scott, Knapp, Henderson, & Maughan, 2001). To this end, the Topper questionnaire aims to measure social functioning in 8- to 13-year olds. This article describes the construction of the Topper questionnaire (Study 1), internal consistency (Study 2a), test-retest reliability (Study 2b) and validity (Study 3a: internal validity, Study 3b: external validity; Study 3c: gender and SES effects). In addition, this article presents normative data (Study 4: N = 10,552 students) for the Topper questionnaire. The four subscales Restless & Disruptive, Prosocial, Unhappy & Gloomy, and Negative intentions had good internal consistency, moderate to good test-retest reliability, and were valid.*

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At primary schools, the focus of educational policy, practice, and assessment has long been centred on students' mathematical and linguistic abilities. However, in recent years there has been a significant increase in interest in the social and emotional functioning of students. This interest has arisen primarily because of research that has shown that social functioning influences their learning performance, well-being, psychopathology, future employment and healthcare needs (Scott et al., 2001) and on the risk to drop out of school (Newcomb & Bagwell, 1995). Research has also shown that children with internalising problems (depressed affect, fear, withdrawn behaviour) as well as those with externalising problems (aggression, disobedience, rule breaking behaviour) perform less well at school (Elias, 2003). Furthermore, social functioning also appears to play a key role in the mental well-being of children. Whenever social problems are not properly addressed they can lead to loneliness, trouble at school, bullying, victimisation, psychological disorders and/or delinquent behaviour (see Prins, 2001). Numerous studies have shown that children who exhibit behavioural problems at an early stage in their development run a higher risk of suffering from these problems during puberty and young adulthood (Van Lier, 2002). Timely recognition and intervention in the case of social problems at school is therefore important to children's educational performance and mental health.

Careful monitoring of children's social and academic development has been found to contribute to positive development, as it focuses teachers and caregivers on children's functioning and facilitates adequate responses if problems in development occur (Scott, Knapp, Henderson, & Maughan, 2001). How can we

assess social problems in school? There are questionnaires for measuring depression (e.g. CDI; Kovacs, 1992), well-being (e.g. School Attitude Questionnaire; Smits & Vorst, 1990) and feelings of competency (e.g. Self-Perception Profile for Children (Harter, 1985), which is translated in Dutch as the Competentie Belevingsschaal voor Kinderen (CBSK); Veerman, Straathof, Treffers, Van den Bergh, & Ten Brink, 2004) separately from one another, but, as of yet, there is no short self-report questionnaire that covers all of the various aspects: feelings of depression, disruptive behaviour and prosocial behaviour, as well as the intentions of young children. Self-report questionnaires for older children that do assess the different aspects include the SDQ (Goodman, 2001) and CBCL (Achenbach, 1991). However, these measures are only suitable for children aged 11 or older. As a result of the demand from schools for a short and manageable self-report tool for younger children that can be used together with Topper Training, the decision was taken to devise a questionnaire that would assess in a clear and uncomplicated manner whether any children between the ages of 8 and 13 were experiencing problems with regard to their social functioning in class.

This paper describes the psychometrical features of the Topper questionnaire. The questionnaire is part of the Topper Training tracking and advice system. Topper Training was first developed in 1996 and has since gone on to become one of the most commonly implemented methods of intervention in the Netherlands in relation to the social and emotional functioning of students: one in five of all primary schools now uses this method. In the Topper Training tracking and advice system, the scores are used to provide teaching staff with useful advice. The Dutch Committee on Tests and Testing (COTAN) granted the Topper questionnaire its seal of approval in 2013 (COTAN, 2013) and the Dutch Inspectorate of Education has certified the Topper questionnaire since August 2014 as an adequate measure of social advances in primary education.

### Definition of Terms

The Topper questionnaire assesses various behaviours and emotions, including disruptive restless behaviour in the classroom context, prosocial behaviour and feelings of unhappiness. In addition to feelings and behaviour, the Topper questionnaire also gauges the intentions of students and thus matches the definition provided by Martin and Reigeluth (1999) who define emotional development as the understanding of one's own affective evaluations and feelings and those of another (feeling), learning how to deal with these feelings (behaviour) and wishing to act upon them (intentions). In addition to theoretical considerations, the questionnaire



also borrows its design from the Topper Training method itself, a method through which children learn to become cognisant of their own behaviour and to make choices based on that awareness, even when they are feeling bad about something. Topper Training assumes that behavioural change in children starts by looking at their desire and intentions: how do you wish to behave/what is the intention behind that behaviour? Consequently, the questionnaire aims to chart the children's behaviour as perceived by the children themselves, to discern when children are feeling unhappy, and to detect malicious intent.

### **Topper Questionnaire: Function, Aim and Target Group**

The function of the Topper questionnaire is to enable teachers to better understand their students, to provide them with proper guidance and to support them in their social functioning in class. To this end, students describe their own social functioning in terms of four different aspects, i.e. restless and disruptive behaviour, prosocial behaviour, feelings of unhappiness and negative intentions. A monitoring or tracking system can be established by getting the students to fill in the questionnaire twice a year (e.g. in November and in May). The Topper questionnaire is not intended as a means of predicting how and when any psychological disorders may arise or to predict the possible future social functioning of a student. Neither is it intended as a way of making any kind of (DSM) diagnosis. The Topper questionnaire is aimed at students aged 8 to 13 in primary school. The questionnaire can also be used in special needs education in primary schools, provided that the students have acquired the necessary technical and reading abilities. The written questions are accompanied by audio files in the digital system. If a student has problems with reading, then it is recommended that complicated terms be clearly explained in advance. The questionnaire is not subject to a time limit. No extra training is required on the part of teachers in order to be able to use the questionnaire. Schools will need to acquire a Topper Training license to make use of the digital Topper tracking and advice system, which also includes the Topper questionnaire. Schools already working with Topper Training can request a login code free of charge via [info@Kanjertraining.nl](mailto:info@Kanjertraining.nl).

### **Topper Questionnaire: Scales**

The scale 'Restless & Disruptive' means impulsive behaviour that is disruptive to the class and beyond the normal expectations of the teacher. When a child is able to control his/her impulses he/she is able to organise his/her thoughts and to control his/her emotions (Van Beemen, 2006). This becomes obvious in their behaviour:

the child does not speak out of turn, thinks before speaking and devises a plan before beginning with a particular activity. The child does not place undue demand on the teacher's attention, which allows him/her to spread their attention and the child to conform to social (group) norms (Delfos, 2007). Children who display impulsive behaviour can place a great strain on a teacher's stamina (Loykens, 2002). Consequently, this concept manifests itself in two ways: firstly, the student displays impulsive behaviour (by shouting in class, making strange noises, being restless) and secondly, the student does not live up to the normal expectations of the teacher (child is mean to others, teacher reacts angrily to their behaviour, child engages in improper behaviour).

The scale 'Prosocial' is used to gauge the extent to which a student believes he/she exhibits prosocial behaviour, feels competent at doing so and also wishes to do so. Prosocial behaviour is made up of three different aspects. The first of these is the capacity to consider the feelings and well-being of another (Eisenberg & Mussen, 1989). This is put into practice by asking the children whether it is their desire to contribute to the well-being of others. The second aspect is the ability to empathise with another by adopting a social perspective and displaying a sense of social responsibility (Durkin, 1995). This is measured by asking questions related to a child's helpful and social behaviour. Thirdly, prosocial behaviour entails the ability to control one's emotions (Eisenberg, Fabes & Spinrad, 2006). This third aspect is not included in this subscale as it is already measured - in its negative sense - in the subscale "Restless & Disruptive behaviour". Including it would merely cause too much overlap between the two different scales.

The scale 'Unhappy & Gloomy' assesses depressive feelings and the feeling that one does not fit in. Depressed children often have a gloomy image of themselves and such an image is indeed a diagnostic criterion for depressive disorders (American Psychiatric Association, 1994). These children are also often afflicted with feelings of dejection and have a poor outlook on the future. This can ultimately lead to a sense of hopelessness: the child comes to believe that things will never get better (De Wit, 2000). Children who are depressed behave in such a way that others are often reluctant to be around them. This in turn amplifies their depressive feelings and makes their depression self-perpetuating (de Wit, 2000). Rejection and isolation can be a cause, a symptom and a cradle for depression all at the same time. That is why the feeling of 'not fitting in, unloved' is also included in this scale. The aim is not to diagnose a depressive disorder, hence the term 'Unhappy & Gloomy'. In accordance with the above, the concept Unhappy & Gloomy manifests itself threefold in the Topper questionnaire: the student has a depressive perception of him/herself, experiences feelings of dejection and helplessness and feels that he/she does not fit in and is unloved.

The scale 'Negative intentions' aims to assess the desire to cause something bad to happen to another, or the desire to be aggressive. Topper Training is based on the assumption that children's intentions provide important inroads for intervention. With regard to aggressive behaviour it seems useful to draw a distinction between inability and unwillingness: Is a student unable to behave well, or does the student have an intrinsic desire to misbehave? If a student indicates that this is the case, then a different approach is used from the one used in the case of inability (Topper Training Foundation, 2007 (conflict management)). The subscale 'Negative intentions' accordingly measures an important concept that is not to be found anywhere in other questionnaires to our knowledge. Because the majority of children tend to have positive intentions, the expectation was that this scale would show up very little variation: high scores are a rare occurrence. In the Topper questionnaire, the concept 'Negative intentions' manifests itself threefold: the student wishes to bully or ridicule other children; the student wishes to act mean towards or to confront other children; and the student wishes to disrupt or impede the work of the teacher.

### **The Current Study**

The purpose of this paper is to examine the psychometric qualities of the Topper questionnaire by studying the factor structure (study 1), internal consistency (study 2a), test-retest reliability (study 2b) and validity (study 3a: internal validity, study 3b: external validity; study 3c: gender and SES effects). Normative data are established (study 4), based on a representative survey of 10,552 students between the ages of 8 and 13. We expected to be able to construct four reliable scales (in terms of internal consistency) to measure four separate constructs with a certain degree of correlation. We expected to find a reasonable level of test-retest reliability, correlations with similar self-report and teacher questionnaires, and differences between the sexes and between social economic status groups.

## **Method**

### **Participants in the Four Studies**

Four studies are described in this paper. For the majority of these studies (Study 1, 2a, 3a, 3c and 4) a representative sample of 10,552 students between the ages of 8 and 13 from 174 primary schools was used. This sample formed part of a larger sample of 522 schools. In the period from March 2011 to March 2012, the Topper questionnaire

was filled in 34,981 times on the internet by students from 522 primary schools. The distribution in these 522 schools in terms of region, level of urbanisation, school size, parent's education, ethnicity and sex was compared to the distribution of these characteristics in all primary schools in the Netherlands. Some regions (particularly in the east of the country) were over-represented. And we had too few schools with a high amount of students with low parent's education. That is why a number of schools with characteristics that were over-represented were removed at random from the sample in order to make it more representative. After this selection was completed, students who had filled in the questionnaire more than once were also removed from the sample in order to ensure a more accurate picture of the inter-item correlations. This was done in the case of 1752 students. The questionnaires that the students filled in first were the ones that were used. 496 other questionnaires were removed from the survey for the following reasons: 307 students were under the age of 8; 45 students were over the age of 13; 135 questionnaires were incorrectly signed (e.g. as coach, demo class or test) - an indication that a teacher had 'tried out' the questionnaire first; and 9 respondents had not taken the test seriously and filled in the same answer for all questions. In the end, the survey covered 10,552 students between the ages of 8 and 13 from 174 primary schools.

For study 2b into test-retest reliability, the research group consisted of 942 students between the ages of 8 and 11. The survey was carried out by contacting the schools that filled in the Topper questionnaire in April 2012. These schools were asked to fill in the questionnaire again 6 weeks later for the purpose of checking test-retest reliability. The children continued to attend school as normal in this period. In 15 of the 942 students (1.6%) the scores on one or more subscales were almost reversed. As it was deemed highly improbable that these students had filled in the questionnaire properly and seriously on both occasions, we considered the scores not to be realistic, and we decided to exclude these scores from the analyses. For study 3b into the correlation with other questionnaires, schools were asked to fill in the questionnaires for the purposes of assessing validity. Some of these schools had participated in training programmes for which the students had already filled in the Topper questionnaire and the School Attitude Questionnaire. The remaining schools were also already working with Topper Training and deemed motivated enough to take part in the study. The sample consists of 1596 students from 3rd class to 6th class and from 34 different schools. The sample is representative in terms of level of urbanisation, parents' education, percentage of non-western foreign students and geographical spread. In order not to excessively burden the students and teachers, we allowed each school to select the questionnaires to be filled in by their students or teachers.

For the purpose of establishing the differences in scores between SES groups (part of Study 3c), 288 schools were included in the study. Comprehensive data pertaining to all of the samples is available in the Statement of Accountability for the Topper questionnaire (Vliek, Riet & Weide, 2012).

### Study 1: Construction of the Topper questionnaire

The original Topper questionnaire (Topper Training Foundation, 2009) consisted of 31 questions split into 5 subscales: Feelings of worthlessness, Positive social behaviour, Unhappy in class, Disruptive behaviour in class and Negative intentions. The level of correlation between feelings of worthlessness and unhappy in class was high:  $r = .62$  for boys and  $r = .65$  for girls. As a result, these scales were subsequently combined. There was also a high level of correlation between the scales for Disruptive behaviour and Negative intentions:  $r = .64$  for boys and  $r = .53$  for girls. These scales could therefore also have been combined for the same reason. However, when developing the questionnaire we chose not to do so, as we found the differentiation between misbehaving and *willing* to misbehave relevant (in line with the ideas of Topper Training: conflict management in the Topper Training teaching guide, 2007). The scales used in the original questionnaire were very short (only 5 or 6 questions). When combined with Cronbach's alphas above .70 this gave a relatively large standard error of measurement and had a similar effect on the confidence intervals for the raw scores. As a result, in March 2011, 28 questions were added to the Topper questionnaire. These questions were chosen based on the four concepts that the questionnaire was designed to measure.

In the current study, we carried out an explorative factor analysis to check whether the constructs resulted in the desired four-factor model. In doing this we assumed a certain level of correlation between the factors because of the fact that various problems related to social functioning often appear to arise simultaneously (Caspi et al., 2014). The questions were selected per subscale based on the statistic and substantive criteria. The statistic criteria were: a factor loading of at least .40 with a cross loading of a maximum of .20 and an item-rest correlation of at least .30. The substantive criteria were: sufficient coverage of substantive domain, no artificially high correlation as a result of overlap between the questions within the scale, and unambiguous and comprehensible questions for the children.

### **Participants and analysis**

For the explorative factor analysis, the representative sample (as described in Participants in the four studies) was split up randomly into two equal parts with the help of SPSS. A Maximum Likelihood factor analysis was used for the first half (5276 respondents). This analysis gives a more consistent estimate for large samples than that produced by other types of analyses, such as Principal Axis Factoring (Embretson & Reise, 2000). An Oblimin rotation was carried out because of the assumption of correlation between the factors. The second half of the sample was used to measure internal validity, as described in study 3a.

### **Results of explorative factor analysis**

With a score of .956, the Kaiser-Meyer-Olkin Criterion for the factor analysability is somewhat on the high side (Pallant, 2007). The scree plot confirmed the choice of using four factors: we found four factors to the left of the kink (Catell, 1966). Together the four factors explained 34% of the variance and they were consistent with the expected constructs: Negative intentions, Unhappy & Gloomy, Prosocial and Restless & Disruptive. The correlations between the factors varied from .17 to .45 in the expected directions.

### **Study 2a: Internal Consistency**

The representative sample of 10,552 students (as described in Participants in the four studies) was used to calculate the internal consistency of the scales for the Topper questionnaire. The Greatest Lower Bound (GLB Sijtsma, 2009) was used to estimate the reliability of the subscales in the Topper questionnaire. This estimate is closer to the actual reliability than that provided by the more commonly used Cronbach's alpha. The Tiaplus programme was used for this purpose. Table 3.1 shows the reliability per standard group and per subscale. It shows that 92.5 % (37 out of 40) of the GLB values were above .80. The internal consistency of the scales in the Topper questionnaire can thus be deemed good.

Scale	8 year-olds		9 year-olds		10 year-olds		11 year-olds		12 & 13 year-olds	
	boy	girl	boy	girl	boy	girl	boy	girl	boy	girl
Restless & Disruptive	.85	.80	.83*	.83	.88	.84	.89	.84	.88	.86
Prosocial	.82	.78	.82	.80	.78*	.79	.84	.81	.85	.82
Unhappy & Gloomy	.81	.86	.84	.87	.85	.89	.86	.90	.83*	.87
Negative intentions	.84	.86	.86	.85	.86	.84	.85	.78	.90	.86

\* GLB could not be computed by the Tiaplus programme, hence Cronbach's alpha was computed.

Table 3.1 Greatest Lower Bound (GLB) of each subscale per standard group

Scale	8 year-olds		9 year-olds		10 year-olds		11 year-olds		12 & 13 year-olds		Total
	boy	girl	boy	girl	boy	girl	boy	girl	boy	girl	
<i>n</i>	26	41	89	110	142	131	141	136	55	56	927
Restless & Disruptive	.73	.72	.66	.61	.71	.62	.64	.69	.80	.67	.69
Prosocial	.85	.61	.70	.77	.80	.75	.77	.82	.76	.86	.78
Unhappy & Gloomy	.87	.76	.62	.65	.70	.79	.69	.82	.61	.67	.73
Negative intentions	.60	.74	.69	.71	.68	.56	.65	.55	.57	.12a	.68

*Note.* All correlations were significant ( $p < .001$ ), except for <sup>a</sup>: these scores show very little variance on test and retest: scores between 1 and 1.25: strong bottom effect.

Table 3.2 Test-retest correlations per standard group

### Study 2b: Test-retest Reliability

In order to gauge the stability of the scores over time, we calculated the test-retest reliability of the scores of 942 students between the ages of 8 and 13 (as described in Participants in the four studies). There was an average time gap of 5.6 weeks between the test and re-test (range: 4 to 8 weeks). Table 3.2 shows the test-retest correlations per standard group and for all of the children together. All of the correlations were significant ( $p < 0.001$ ), except for the correlation for Negative intentions for girls aged between 12 and 13. The test-retest reliability appeared to be fair to good (varying from  $r = .61$  to  $.87$ ) for Unhappy & Gloomy, satisfactory to good ( $r = .70$  to  $.86$ ) for Restless & Disruptive (with one modest correlation of  $.61$ ), fair to good for Prosocial ( $r = .61$  to  $.80$ ) and fair to satisfactory for Negative intentions (all except one between  $.55$  and  $.74$ ).

### Study 3a: Internal Validity

The representative sample of 10,552 students was split randomly into two parts. One half was used for the construction of the questionnaire (selection of the items), while a confirmatory factor analysis was carried out in AMOS on the other half of the sample (also 5276 respondents). For a survey as large as this one, the Root Mean Square Error of Approximation (RMSEA) provides a suitable measurement of the 'goodness of fit', which must be lower than  $.07$  in order to be acceptable. Other ways of measuring the model fit include the goodness-of-fit index (GFI) and adjusted GFI (AGFI), both of which must be greater than  $.90$  for an acceptable fit (Schumacker & Lomax, 1996).

#### Results of confirmatory factor analysis

The results showed a good fit for the four-factor model for the Topper questionnaire. Fit indices were: RMSEA =  $.047$ ; 90% confidence interval (CI) =  $.046 - .048$ ; GFI =  $.92$ , AGFI =  $.91$ . Figure 3.1 shows the result of the confirmatory factor analysis with the standardised factor loadings.

Table 3.3 shows the correlations between the subscales. It shows a relatively good level of correlation between the concepts ( $r$  between  $.26$  and  $.54$ ). We can thus conclude that the Topper questionnaire measures four independent concepts that show a fair to reasonable level of correlation.



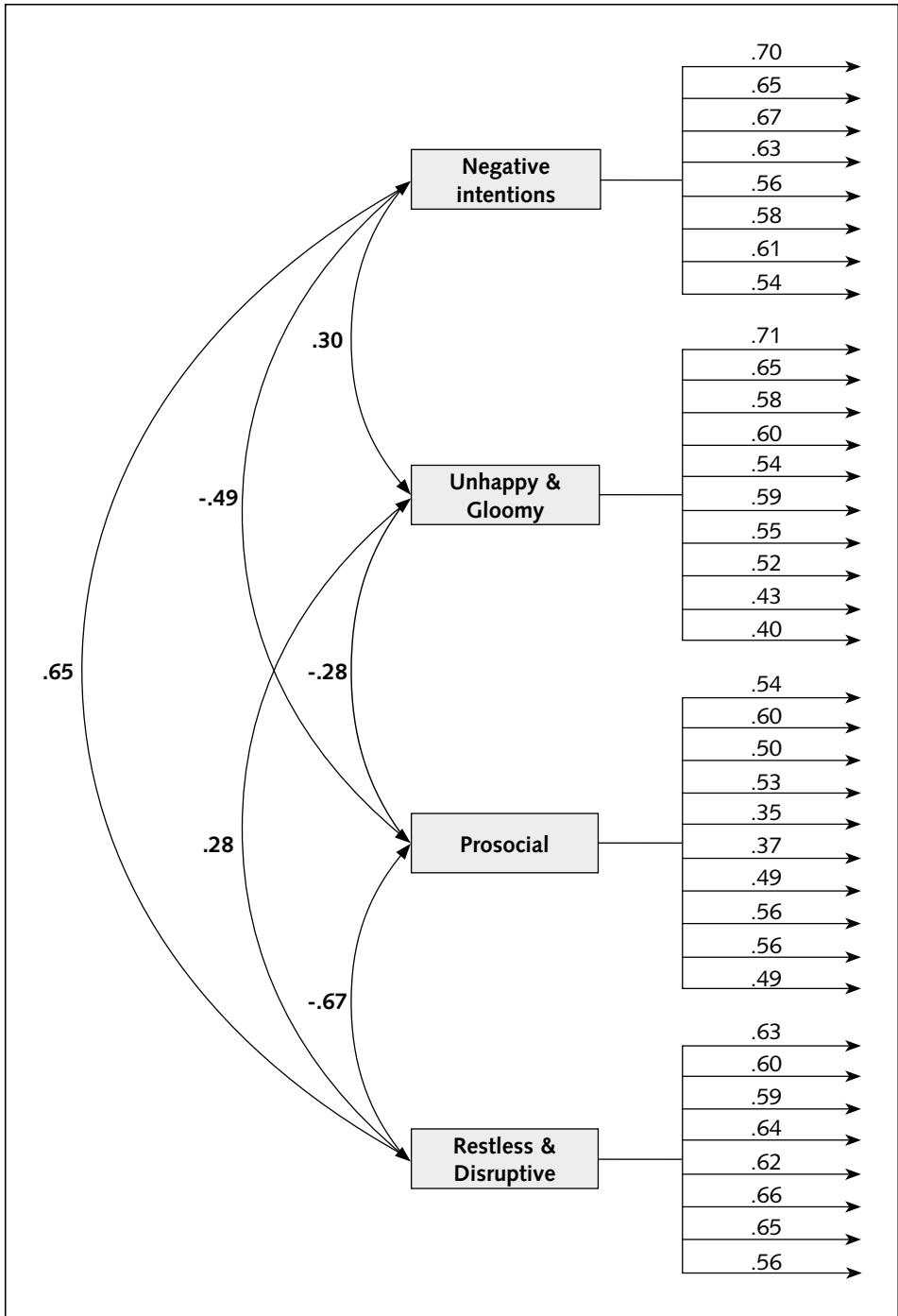


Figure 3.1 Confirmatory factor analysis of the Topper Questionnaire

Subschaal	Restless & Disruptive	Prosocial	Unhappy & Gloomy	Negative intentions
Restless & Disruptive		-.54**	.26**	.54**
Prosocial	-.54**		-.26**	-.41**
Unhappy & Gloomy	.26**	-.26**		.26**
Negative intentions	.54**	-.41**	.26**	
** $p < .001$				

Table 3.3 Correlations between the subscales

### Study 3b: Convergent and Discriminant Validity

#### Participants

This study used the sample with 1596 students as described in Participants in the four studies. The extra questionnaires were sent out to the schools and completed per class under the supervision of the teachers.

#### Instruments

In order to study the convergent validity of the Topper questionnaire, we compared the scores of the children on the Topper questionnaire with the scores on three conceptually related self-assessment tests for students: the Dutch version of the Self-Perception Profile for Children, the Dutch version of the Child Depression Inventory (CDI) and the School Attitude Questionnaire (SAQ). The scores on the Topper questionnaire were also correlated to two teacher questionnaires: the Strengths and Difficulties Questionnaire (SDQ), and the Instrument for Reactive and Proactive Aggression (IRPA).

#### *Self-Perception Profile for Children*

The CBSK (Veerman, Straathof, Treffers, Van den Bergh, & Ten Brink, 2004) is the Dutch version of Harter's Self-Perception Profile for Children (Harter, 1985). The questionnaire measures children's perception of themselves and how they view their own skills and/or competency in a number of relevant areas. Three of the six subscales were used for the purpose of this study: Social Acceptance, Behavioural Conduct and Global Self-worth. Social Acceptance measures the extent to which a child thinks he/she fits in. Does the child believe he/she is loved, has enough friends and can make friends easily? The subscale Behavioural Conduct gauges whether a child thinks he/she behaves 'decently', i.e. does not do anything that would be

considered (morally) unacceptable. Does the child behave as others would expect the child to? The subscale Global Self-worth measures how a child perceives him/herself to be in general. What is his/her overall feeling of self-worth? The reliability and validity of the CBSK subscales are satisfactory (Veerman et al., 2004). Alphas in the current survey were: Social Acceptance = .79, Behavioural Conduct = .69 and Global Self-worth = .85.

### ***Child Depression Inventory (CDI)***

The Child Depression Inventory (Kovacs, 1992) is the most thoroughly researched and widely used instrument for measuring depression in children. The questionnaire measures depressive feelings and has both practical and research applications.

The CDI has a strong prediction, convergent and construct validity (Kovacs, 2001; Mattison, Handford, Kales, Goodman, & McLaughlin, 1990). The internal consistency of the Dutch version used here (Van Leuven & Van Beek, 2000) was deemed good in a non-clinical survey of children between the ages of 8 and 17 (Van Beek, Hessen, Hutteman, Verhulp, Van Leuven, 2012). Cronbach's alpha in the current survey was .86.

### ***School Attitude Questionnaire (SAQ)***

The School Attitude Questionnaire was partly executed, i.e. for the subscales Enjoyment level at school, Relationship with teacher, Social acceptance and Well-being (Smits & Vorst, 1990). The validity and reliability of these subscales were found to be satisfactory to good (Smits & Vorst, 1990). Alphas in the survey were good: Enjoyment level at school = .89, Social acceptance = .89, Relationship with teacher = .87, and Well-being = .93.

### ***Strengths and Difficulties Questionnaire (SDQ)***

The Strengths and Difficulties Questionnaire is a short 25-item questionnaire that is filled in by the teacher. It measures Emotional Symptoms, Conduct Problems, Hyperactivity, Peer problems and Prosocial behaviour (Goodman, 2001). The Dutch version of the SDQ was deemed satisfactory to good with regard to its psychometrical qualities. Cronbach's alphas were satisfactory to good: Emotional Symptoms = .76, Conduct Problems = .77, Hyperactivity = .89, Peer Problems = .74 and Prosocial behaviour = .81 (Van Widenfelt, Goedhart, Treffers, & Goodman, 2003).

	<b>Restless &amp; Disruptive</b>	<b>Prosocial</b>	<b>Unhappy &amp; Gloomy</b>	<b>Negative intentions</b>
CBSK ( <i>n</i> = 326)				
Social Acceptance	.03	<i>.13*</i>	<b>-.34**</b>	.03
Behavioural Conduct	<b>-.37**</b>	<i>.36**</i>	<b>-.28**</b>	<b>-.17**</b>
Global Self-Worth	<b>-.16**</b>	<i>.20**</i>	<b>-.45**</b>	-.04
CDI ( <i>n</i> = 475)				
Depression	<i>.33**</i>	<b>-.36**</b>	<i>.67**</i>	<i>.25**</i>
SAQ ( <i>n</i> = 931)				
Enjoyment level at school	<b>-.35**</b>	<i>.32**</i>	<b>-.32**</b>	<b>-.34**</b>
Social acceptance	-.06	<i>.15**</i>	<b>-.51**</b>	-.06
Relationship with teacher	<b>-.34**</b>	<i>.26**</i>	<b>-.22**</b>	<b>-.31**</b>
Well-being	<b>-.27**</b>	<i>.26**</i>	<b>-.39**</b>	<b>-.25**</b>
SDQ ( <i>n</i> = 194)				
Total Difficulties	.14	.10	<i>.24**</i>	.00
Emotional Symptoms	-.04	.08	<i>.29**</i>	-.01
Conduct Problems	<i>.12</i>	.05	.08	<i>-.03</i>
Hyperactivity	<i>.35**</i>	.06	.12	<i>.15*</i>
Peer Problems	<b>-.17*</b>	.10	<i>.15*</i>	<b>-.21**</b>
Prosocial Behaviour	.02	<i>.04</i>	-.03	.03
IRPA ( <i>n</i> = 412)				
Aggression	<i>.35**</i>	<b>-.14**</b>	<i>.11*</i>	<i>.24**</i>
Physical	<i>.25**</i>	<b>-.12*</b>	.04	<i>.22**</i>
Verbal	<i>.31**</i>	<b>-.14**</b>	.09	<i>.16**</i>
Covert	<i>.26**</i>	-.08	<i>.11*</i>	<i>.19**</i>
Proactive function	<i>.21**</i>	-.06	-.05	<i>.13*</i>
Reactive function	.08	-.06	<i>.25**</i>	.08
<i>Note.</i> The expectation of a negative correlation is shown in bold, while the expectation of a positive correlation is shown in italics.				

Table 3.4 Correlations with other instruments

### ***Instrument for Reactive and Proactive Aggression (IRPA)***

The Instrument for reactive and proactive aggression (Polman, Orobio de Castro, Thomaes, & Van Aken, 2009) is a version of the questionnaire devised by Kupersmidt, Willoughby and Bryant (1998). This questionnaire draws a distinction between the form and frequency of aggression on the one hand and the function of such behaviour on the other. The forms of aggression measured are: physical (kicking, pushing, hitting), verbal (swearing, squabbling) and covert aggression (telling lies/gossiping and secretly doing things that are not allowed), and the two functions are: proactive (to hurt/be mean, act the boss, because the child enjoys it) and reactive aggression (because the child was upset, because the child felt threatened, and because the child was angry). The questionnaire has good validity and reliability is fair to good (Polman, Orobio de Castro, Thomaes & Van Aken, 2009). Cronbach's alphas in the current survey were: physical = .87, verbal = .83, covert = .68, reactive = .84, proactive = .79.

### **Results**

Table 3.4 shows the correlations between the scales of all measures. The expectation of a negative correlation is shown in bold, while the expectation of a positive correlation is shown in italics. Table 3.4 shows that many of the correlations matched the initial expectations. This applies to both boys and girls and to the various age groups (see Vliek, Riet, & Weide, 2012). The specifics of the expectations are explained further and the correlations for boys and girls are detailed separately per age group in the Statement of Accountability for the Topper questionnaire (Vliek, Riet, & Weide, 2012).

## **Study 3c: Differences between sexes and SES groups**

### **Sex differences**

Boys appear to exhibit more behavioural problems than girls (Orobio de Castro, 2008). One can therefore expect that boys will score higher for disruptive behaviour and lower for prosocial behaviour. We also expect to find that boys are more inclined to misbehave than girls. Consequently, a difference between boys and girls can be expected to show up on these three scales. During childhood, right up to young adolescence, depressive symptoms are usually reported in equal numbers for boys and girls (Timbremont & Braet, 2005). That is why no significant difference is anticipated between boys and girls with regard to Unhappy & Gloomy. Table 3.5 shows the means and standard deviations as found in the representative research group of 10,552 students. It shows that the expected significant effects with regard

to gender are found in all of the scales. The effect sizes shown (Cohen's *d*) for Negative intentions, Restless & Disruptive and Prosocial are small to average. The effect size for Unhappy & Gloomy is small (-.20) and the difference is not significant. This matches the expected differences between boys and girls. These results support the validity of the Topper questionnaire.

	Boys ( <i>n</i> = 5341)		Girls ( <i>n</i> = 5211)			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>d</i>
Restless & Disruptive	1.68	.51	1.44	.39	27.2**	.53
Prosocial	3.43	.35	3.55	.31	-.19**	-.37
Unhappy & Gloomy	1.42	.42	1.51	.47	-10.3**	-.20
Negative intentions	1.18	.31	1.08	.20	20.4**	.40
** <i>p</i> < .001						

Table 3.5 Sex differences

### Social Economic Status

Research has shown that children from families with a low social economic status tend to report a higher level of depressive feelings (Lorant et al., 2003) and behavioural problems (Orbio de Castro, 2008). As a result, one can expect that children from families with a low social economic status will score higher on the subscales Unhappy & Gloomy and Restless & Disruptive and lower on Prosocial than children from other families. In the absence of a specific hypothesis, we can only speculate how these children might score on Negative intentions.

The level of education enjoyed by parents is the standard that is used to determine the social economic status of schoolchildren in the Netherlands. This is expressed as a statistical value for each student. The percentage of students (*P*) from whom this statistical value is other than 0 is determined per school. When this value is other than 0 it indicates a low level of education on the part of one or both of the parents. The schools are split into three separate categories: schools with a *P* lower than 10; between 10 and 25; greater than 25. Then the schools with large and small numbers of students with a value other than 0 are examined to see if there is a difference in terms of the scores on the Topper questionnaire. The survey consisted of 288 schools that filled in the Topper questionnaire on the internet. The number of schools in the different categories was respectively 170, 95 and 23. For all of

the scales we found significant differences between schools with large and small numbers of students with a value other than 0. Post hoc analyses with Bonferroni correction showed that only the most extreme categories indicated any differences in the subscales Negative intentions and Unhappy & Gloomy and that for Restless & Disruptive and Prosocial there was a difference between the third category and the first two categories. All of the differences were in the expected directions. The effect sizes ( $\eta^2$ ) indicated small differences (between .022 and .045). Given that this relates to averages for students per school, it is quite surprising that differences were found between schools with large and small numbers of students with a high statistical value in terms of parent's education. These results support the validity of the Topper questionnaire.

#### **Study 4: Normative data**

The normative data for the Topper questionnaire were derived based on students in primary schools. The questionnaire thus shows how students feel and behave and what their intentions are compared to other children in primary education.

#### **Participants**

In devising the normative data, a representative survey of 10,552 students was used, as described in Research groups for the four studies. The several standard groups with regard to age and gender range in size from 395 to 1382 students.

#### **Correlation with sex and age**

None of the scales showed any significant differences between 12- and 13-year-olds. As a result, these age groups were combined. For the other age groups, on the scales Unhappy & Gloomy, Restless & Disruptive and Prosocial, the differences with regard to sex and age were found to be significant and this is why it was decided to present the normative data separately for both sex and age (see Tables 3.6 - 3.9).

	Boys			Girls		
	Positive	Conspicuous	Problematic	Positive	Conspicuous	Problematic
<i>Percentile Age</i>	<i>0 - 80</i>	<i>80 - 95</i>	<i>95 - 100</i>	<i>0 - 80</i>	<i>80 - 95</i>	<i>95 - 100</i>
8	< 2.00	2.00 - 2.50	> 2.50	< 1.63	1.63 - 2.00	> 2.00
9	< 2.00	2.00 - 2.63	> 2.63	< 1.63	1.63 - 2.13	> 2.13
10	< 2.13	2.13 - 2.63	> 2.63	< 1.75	1.75 - 2.25	> 2.25
11	< 2.13	2.13 - 2.75	> 2.75	< 1.88	1.88 - 2.25	> 2.25
12&13	< 2.25	2.25 - 2.75	> 2.75	< 1.88	1.88 - 2.38	> 2.38

Table 3.6 Normative data Restless &amp; Disruptive

	Boys			Girls		
	Positive	Conspicuous	Problematic	Positive	Conspicuous	Problematic
<i>Percentile Age</i>	<i>20 - 100</i>	<i>5 - 20</i>	<i>0 - 5</i>	<i>20 - 100</i>	<i>5 - 20</i>	<i>0 - 5</i>
8	> 3.20	2.90 - 3.20	< 2.90	> 3.40	3.00 - 3.40	< 3.00
9	> 3.20	2.80 - 3.20	< 2.80	> 3.30	3.00 - 3.30	< 3.00
10	> 3.10	2.90 - 3.10	< 2.90	> 3.30	3.00 - 3.30	< 3.00
11	> 3.10	2.90 - 3.10	< 2.90	> 3.20	3.00 - 3.20	< 3.00
12&13	> 3.00	2.80 - 3.00	< 2.80	> 3.20	2.98 - 3.20	< 2.98

Table 3.7 Normative data Prosocial

	Boys			Girls		
	Positive	Conspicuous	Problematic	Positive	Conspicuous	Problematic
<i>Percentile Age</i>	<i>0 - 80</i>	<i>80 - 95</i>	<i>95 - 100</i>	<i>0 - 80</i>	<i>80 - 95</i>	<i>95 - 100</i>
8	< 1.80	1.80 - 2.40	> 2.40	< 1.90	1.90 - 2.60	> 2.60
9	< 1.80	1.80 - 2.40	> 2.40	< 1.90	1.90 - 2.50	> 2.50
10	< 1.70	1.70 - 2.30	> 2.30	< 1.90	1.90 - 2.50	> 2.50
11	< 1.60	1.60 - 2.10	> 2.10	< 1.80	1.80 - 2.35	> 2.35
12&13	< 1.60	1.60 - 2.10	> 2.10	< 1.80	1.8 - 2.30	> 2.30

Table 3.8 Normative data Unhappy &amp; Gloomy



	Boys			Girls		
	Positive	Conspicuous	Problematic	Positive	Conspicuous	Problematic
<i>Percentile Age</i>	<i>0 - 95</i>	<i>95 - 99</i>	<i>99 - 100</i>	<i>0 - 95</i>	<i>95 - 99</i>	<i>99 - 100</i>
8	< 1.75	1.75 - 2.37	> 2.37	< 1.50	1.50 - 2.13	> 2.13
9	< 1.75	1.75 - 2.50	> 2.50	< 1.38	1.38 - 2.00	> 2.00
10	< 1.88	1.88 - 2.25	> 2.25	< 1.38	1.38 - 2.00	> 2.00
11	< 1.75	1.75 - 2.13	> 2.13	< 1.38	1.38 - 1.88	> 1.88
12&13	< 2.00	2.00 - 2.96	> 2.96	< 1.53	1.53 - 2.13	> 2.13

Table 3.9 Normative data Negative intentions

## Discussion

The social functioning of students is of importance to the well-being and mental health of students and to their performance at school. The monitoring of social functioning at school is particularly important with regard to being able to intervene when and where required. The Topper questionnaire was developed for children between the ages of 8 and 13 in response to the need for a short questionnaire that could measure the entire spectrum of social functioning (including behaviour, feelings and intentions). This paper demonstrates that the Topper questionnaire possesses good psychometrical qualities.

The questionnaire can be used to measure four related concepts (Restless & Disruptive, Prosocial, Unhappy & Gloomy and Negative intentions) all of which are linked to each other as expected. The internal consistency of the subscales is good and the test-retest reliability after a period of 6 weeks is fair to good for the various scales and subgroups. In general, the Topper questionnaire exhibited the expected correlations with conceptually similar self-report questionnaires (the SAQ measures enjoyment levels at school, well-being, relationship with the teacher and the level of social acceptance; the CBSK measures social acceptance, behavioural conduct and global self-worth; and the CDI measures depression) and to a lesser extent with teacher questionnaires (SDQ measures Emotional Symptoms, Conduct Problems, Hyperactivity, Peer Problems and Prosocial behaviour; and the IRPA measures pro-active and reactive aggression and physical, verbal and covert aggression). In addition, and as expected, boys scored higher than girls on Restless & Disruptive, Negative intentions and lower on Prosocial, and the difference

between boys and girls with regard to Unhappy & Gloomy was not significant, also as expected. Children in schools with a large number of students with a statistical value for parent's education other than 0 (indicating a low level of education for the parents) scored on average worse on all of the scales, as we had expected they would. The normative data used for the Topper questionnaire were based on a large representative survey ( $N = 10,552$ ) of students between the ages of 8 and 13 from primary schools. The normative data can also be applied to special needs education, though in that case it must be clear that the students' scores will be compared with students from the normal primary education system.

In general, the psychometrical qualities of the Topper questionnaires were found to be good. It proved to be a wise decision to draw a substantive distinction between disruptive behaviour and negative intentions: the four-factor model showed a good fit. The subscales, though connected, turned out to measure two separate concepts. The questionnaire is still relatively short (36 items) and also works well together with the widely implemented method of intervention: Topper Training. Teachers can use the results of the questionnaire together with the suggestions provided in the digital system.

The questionnaire does have its limitations, too, however. For example, the Negative intentions scale falls somewhat short in terms of distribution, due to a bottom effect. We had expected to find this, as most children do not have the intention to misbehave. This means that the questionnaire is mostly suited to finding those students who score high in this regard and less suitable to finding degrees of difference between children who score 'normal' on this scale, i.e. a lower score. The stability of the scores (test-retest after 6 weeks) that we found on this scale is also lower than on the other scales, due to the limited variance. And finally, we found the scale Negative intentions to have a remarkably low test-retest correlation for girls aged between 12 and 13 ( $r = .12$ ). The scores of the girls in this group for both measurements varied between 1 and a maximum of 1.25, which hints at a strong bottom effect (scores could range between 1 and 4). Because of this 'cluster effect' it is not possible to identify a test-retest correlation in this group. A more diverse sample would be needed in order to reach any conclusion regarding the stability of the results for this specific scale in this group.

Although the correlation between the Topper questionnaire and other self-report questionnaires was found to be good, the same could not be said in relation to the teacher questionnaires. This is not due to this specific measure, but has also been discovered by others, with many different measures (e.g. Grigorenko, Geiser, Slobodskaya, & Francis, 2010). Apparently, children perceive their functioning quite differently than their teachers do, which only testifies to the importance of

a self-report questionnaire for children. The low level of correlation between the Negative intentions scale and the teacher questionnaires could also be attributed to the limited variance on this scale. It would therefore be useful to carry out a survey that involves greater numbers of children whose intention it is to misbehave.

With the SDQ we found the expected correlation between teacher-reported Emotional and Hyperactivity problems, and the scales for Unhappy & Gloomy and Restless & Disruptive. Judging from the Topper questionnaire, scores on the scale Prosocial were not correlated with SDQ's teacher-reported Prosocial behaviour, or any negative correlation with Emotional or Conduct problems. We did find a small negative correlation between this subscale and teacher-reported physical and verbal aggression on the IRPA. Further investigation of the correlations with the self-report questionnaires shows that the Prosocial scale appears to measure satisfaction with one's own behaviour, happiness (not depressed) and enjoyment at school more than it does the behaviour itself. This broad range is in fact also to be found in the description of the concept and therefore in the questions themselves: feelings of social competency, willing to contribute to the well-being of another and the demonstration of a sense of social responsibility. It may be a good idea to change the name of the subscale, as the current name suggests that it covers behaviour alone (possible alternative: 'Perceived social competency').

In general, the study shows that the Topper questionnaire is both reliable and valid. The Dutch Committee on Tests and Testing (COTAN) also arrived at this conclusion in 2013 and granted the questionnaire its approval (COTAN, 2013). As a result, the Dutch Inspectorate of Education has approved the Topper questionnaire in August 2014 to measure social advances in education. The Topper questionnaire is easy to use, works well together with Topper Training and is now being used as a student monitoring system by many schools that employ the Topper Training method.



## Chapter 4

# Improving Classroom Climate: Effectiveness of Topper Training (Kanjertraining) in Disruptive Primary School Classes

Submitted for publication:

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Lilian Vliek reports a conflict of interest, as a psychologist at the Topper Training Foundation. She did not deliver the intervention examined in this paper and does not have any financial interest in the outcomes of the study. Data are available upon request.



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*In this paper, we tested the effectiveness of a short cognitive behavioural intervention for disruptive classrooms, the aim of which is to improve classroom climate and to enhance positive child behaviour by using peer group techniques, focusing on social information processing and making classmates, teachers and parents accountable for respectful behaviour in school. Fourteen disruptive primary school classes (n = 353, mean age: 9.8 years, range: 8-13 years) in urgent need of help followed Topper Training, and fourteen classes in the same schools served as comparison classes (n = 343, mean age: 10.3 years, range 8-13 years). Multilevel analyses, controlling for baseline classroom climate, revealed significant improvements in classroom climate, teacher-reported disruptive behaviour, child-reported self-esteem, depressed mood and prosocial behaviour. No significant effects were found for self-reported aggression. No moderation effects were found for baseline classroom climate. The results provide a first indication of the effectiveness of Topper Training in a classroom context.*

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In every classroom, teachers must get along with students and students must get along with one another if learning is to take place. Children who work in a negative classroom climate (defined as a group dynamic that leaves children feeling rejected by their classmates and disconnected from their teacher) run an increased risk of behavioural problems and low academic achievement (Elias, 2003). However, little is known about the effectiveness of cognitive behavioural interventions on classroom climate. Most studies have only examined the effects of such interventions on individual children in classrooms (e.g., Salmivalli & Poskiparta, 2012; for a review see Wilson and Lipsey, 2007). It is important to study the effectiveness of interventions on classroom climate, since climate is much more than the sum of its parts. For example, anxiety and peer rejection are related to victimisation in classrooms, but only when reinforcement of these behaviours by peers is common (Kärnä, Voeten, Poskiparta, & Salmivalli, 2010). Accordingly, improving the relationships between classmates and also between the teacher and students has been found to reduce victimisation for individual children (Smith, Ananiadou, & Cowie, 2003). However, even though the effects of group dynamics on individual children have been studied, the effects of classroom interventions at the classroom level are virtually unknown.

Three promising strategies for improving classroom climate include peer group techniques, parental involvement and social information processing training (for an overview see e.g. Wilson & Lipsey, 2007). This study aims to explore the effects of

Topper Training, a concise cognitive behavioural intervention that employs these three strategies, on classroom and individual child outcomes. We studied the effectiveness of Topper Training on classroom climate (perceived social acceptance and teacher-child relationship) and on the child-level variables of aggression, depressed mood, self-esteem and prosocial behaviour. We also examined whether Topper Training would be more effective for severely disrupted classes than for mildly disrupted classes.

### Peer Group Techniques

In a classroom characterised by disruptive behaviour and negative social relations, it is advisable to implement an intervention that targets the whole peer group, since these problems often constitute group problems (Salmivalli, 1998). Although the whole class plays a role in classroom behaviour, relatively few studies have focused on the effects of interventions whose aim is to change overall classroom dynamics on classroom level outcomes (for child-level outcomes of such interventions see Kärnä et al., 2010; Salmivalli, Voeten, & Poskiparta, 2011). In an exceptional study, Salmivalli et al. (2011) found that eliminating bystander reinforcement was effective in improving social relations between children and in improving individual children's behavioural patterns.

Another phenomenon that requires a peer group intervention, rather than individual intervention, is the perceived social status of a child in a group. Research has shown that aggressive children often misinterpret their dominance as popularity (Orobio de Castro, Brendgen, Van Boxtel, Vitaro, & Schaepers, 2007), a misinterpretation that bolsters their domineering behaviour. Working with the whole classroom on responsible behaviour and mutual acceptance as a way of becoming popular and accepted by others can motivate these children to behave less dominantly and more socially, which in turn leads to better acceptance by one's peers.

### Parental Involvement

Parents can also have an effect on classroom climate. Parental attitudes towards school are communicated to their children and thus influence their motivation regarding school (Pomerantz, Moorman, & Litwack, 2007). Similarly, parental attitudes toward aggressive behaviour at school have an impact on child behaviour in the classroom. For instance, parental support for fighting and the absence of support for nonviolence were associated with aggression in adolescents (Farrell, Henry, Mays & Schoeny, 2011). Moreover, these parenting variables moderated the



relationship between delinquent peer associations, class-level and perceived school norms supporting aggression and the actual physical aggression score of the child. Therefore, involving parents in order to create positive parental attitudes towards school and support for nonviolence may help to improve classroom climate.

### Social Information Processing

When children are interacting with one another, how each child perceives the other's behaviour and intentions is crucial. For example, does a child interpret another's actions (e.g. spilling milk on his back) as accidental or as intentional? The latter interpretation is called a hostile intent attribution since the child thinks that he or she is being hurt *on purpose*. In that case a child will tend to have a more hostile reaction than when he or she thinks the act was an accident. The attribution of hostile intent is imbedded in the theory of Social Information Processing (SIP; Crick & Dodge, 1994; Dodge, 1986). According to social information processing theory, social behaviour is the result of six interrelated steps: (1) encoding situational and internal cues; (2) interpretation of cues; (3) selecting or clarifying a goal; (4) generating or accessing possible responses; (5) choosing a response; and (6) behavioural enactment (Crick & Dodge, 1994). In selecting and interpreting ambiguous social signals of others (steps 1 and 2), aggressive and depressed children were found to attribute hostile intent to their peers more often than children who did not have these problems (Dodge, Landsford, Salzer Burks, Bates, Pettit, Fontain, & Price, 2003; Orobio de Castro, Veerman, Koops, Bosch, & Monshouwer, 2002). Furthermore, these children tend to have more difficulty accessing and evaluating responses to social situations (step 4 and 5) and hence have fewer responses from which to choose in social situations. They may also fail to evaluate the consequences of particular behaviours (e.g., Orobio de Castro, Merk, Koops, Veerman, & Bosch, 2005).

Training children in social information processing is an effective method for reducing aggression, even though effect sizes tend to be modest (for a meta-analytic review see Wilson & Lipsey, 2006). Interventions targeting social information processing have been tested quite often on individual outcomes, such as aggression and to a lesser extent depression. However, the effect on group level outcomes such as classroom climate has not been studied. This is a significant omission, as difficulties in processing social information can also have an impact at the group level. For example, Dodge (2011) found that children who display hostile attributional biases, who are unable to generate competent solutions to interpersonal dilemmas and who struggle to enact competent behavioural responses are at risk of becoming socially rejected by their peers.

## Topper Training

Topper Training (“Kanjertraining” in Dutch; Topper Training Foundation, 2007a; 2007b) is designed to diminish child level and classroom level social problems by targeting the above three aspects (peer groups techniques, parental involvement and social information processing training). Topper Training is one of the most widely disseminated school-based intervention aimed at reducing social-emotional problems in the Netherlands. One fifth of all Dutch schools have teachers licensed to give this training to stimulate positive social interaction and to prevent and cure social problems in the classroom. When the classroom climate is disrupted to such a degree that teachers feel unable to handle the situation on their own, a trained psychologist can provide an intensive ‘Topper Training crisis intervention’ module. This intervention module is a short, multi-component training that takes up three school days (or ten sessions of 90 mins each). Both children and parents participate, and a parent evening is organised in advance with the involvement of the teacher and the head of the school. It is critical that the intervention maintains a positive, solution-oriented approach and encourages the use of positive, non-hostile attributions, both of which support prosocial behaviour. This is combined with a very clear and firm approach in order to restrict negative behaviour and to make all participants feel responsible for preventing or reducing bullying and disruptive behaviour in the classroom.

Topper Training has three important aspects: 1) Peer group techniques: the training is directed to the whole classroom and includes exercises aimed at diminishing the reinforcement of negative behaviour and also features specific feedback sessions; 2) Parental involvement: Topper Training teaches parents that they have a responsibility for their children’s respectful social behaviour in the classroom; 3) Training several steps in social information processing: Topper Training includes exercises for children aimed at increasing their non-hostile (positive) attributions to others and includes exercises with competent behavioural responses in social dilemmas. The attribution of non-hostile intent to others is taught not only to the children but also to teachers, school policy makers and parents.

### Peer group techniques of Topper Training

In Topper Training, children learn to ignore disruptive behaviour instead of reinforcing it. In one exercise, for instance, a child tries to elicit a reaction from fellow classmates by acting hyper, funny or strange. The classmates then practice ignoring this behaviour. In this exercise, the active child is considered the ‘engine’, while the non-responsive classmates are called closed ‘gas stations’ that do not ‘fuel’ the inappropriate behaviour. Based on this practice, the children and the teacher learn a language in which the bystanders can be made responsible: “Do not give any gas, otherwise your classmate will not stop”.

Topper Training helps children to gain insights into their actual popularity through an exercise in which children give feedback to each other. Classmates give compliments and suggestions for behavioural changes. This is a confrontational method and one in which the trainer has to ensure an atmosphere of mutual respect. Students are reminded that the feedback is given with the positive intention of helping each other. This exercise teaches children that they are responsible for their own behaviour. Since most children want to fit in with their classmates and have the desire to behave prosocially, they will guide each other towards respectful behaviour, motivated by the desire for peer acceptance. The method is used for all children, regardless of whether they engage in disruptive behaviour or not. Specifically, shy and emotional children can also learn to choose how they will react. Thus, they also benefit from receiving feedback and suggestions from their classmates. The exercise teaches students that children who can be trusted and who frequently demonstrate prosocial behaviour will receive support from their classmates.

### **Parental involvement in Topper Training**

On this level, Topper Training endeavours to demonstrate to teachers, parents and the head of the school that a respectful attitude in which one expects non-hostile intentions on the part of children, parents and teachers is necessary in order to create a respectful classroom climate. Parents are invited to join the lessons. During a parent evening, the psychologist makes clear that there is no excuse for child or parent misbehaviour. Parents learn that they are expected to treat children, teachers and other parents with respect. (This approach is only needed for a small minority of parents, as most parents tend to exercise a positive interaction style). The head of the school learns to be very clear and consistent in allowing only respectful behaviour by all parties involved with the child. This implies, for example, that at the start of a conversation with parents the head of the school will state that the aim is to find a solution that promotes not only the well-being of the child in question, but also the well-being of the classmates, the teacher and the school.

### **Social information processing in Topper Training**

Topper Training aims to promote positive, non-hostile attributions of other's intentions enhance children's awareness of their own behaviour and increase prosocial behaviour. Children learn that they can choose for themselves how to behave, which increases their feeling of responsibility. This is done through role-play involving the use of four coloured caps. Each cap represents a type of behaviour that one can choose. The black cap represents dominant, bullying and aggressive behaviour. The red cap represents the support of misconduct and making fun of

someone else and oneself. The yellow cap represents shy, anxious, unassertive victim behaviour, while the white cap represents Topper (“Kanjer” in Dutch) or prosocial, authentic and trustworthy behaviour. Children experience the consequences of these behaviours in role-plays, which also gives them the chance to study the intentions of other children. The role-plays include situations in which the children learn to react without resorting to hostile thinking. Trusting their classmates is stimulated through rules (“we trust and help each other”), relevant discussions, trust-building physical exercises and questions regarding whether the children themselves would like to be trusted. The aim is to increase positive expectations in new situations with their classmates and decrease feelings of distrust and defensiveness.

Teachers learn how to express this respectful, non-hostile attitude in the classroom. For example, when a child misbehaves, teachers do not immediately presume hostile intent but learn to act surprised and ask the children: “Was it your intention to hurt this child?” In the rare cases where a child intends to misbehave, teachers contact the parents. Teachers are instructed to expect that parents will be willing to work constructively together with the school (also attributing positive intentions). The psychologist functions as a role model in this regard. After each session, the teacher receives personal coaching from the psychologist. After the classroom training, the teacher follows a three-day course in which this attitude and behaviour is practiced intensively so that the teacher can apply this behaviour in class after the psychologist has left. The effectiveness of this three-day teacher course was not included in the current study because the post-test measurements had already been recorded before this course was given.

### Effectiveness of Topper Training

A previous quasi-experimental study showed that Topper Training was effective when delivered in a mental healthcare setting. Specifically, Topper Training reduced internalising and externalising problem behaviour among individual children aged 8 to 11 with psychosocial problems who were trained together with their parents in a peer group (Vliek, Overbeek, & Orobio de Castro, 2014). Effect sizes were in the small to medium range (Cohen’s *d* between .33 and .46).

The current study explores the effects of Topper Training on classroom climate in primary school classes with an urgent need of help due to a negative classroom climate. At the class level, we hypothesised that Topper Training would increase both perceived social acceptance by classmates and the quality of the teacher-child relationship while at the same time decreasing classroom disruptive behaviour. Additionally, we hypothesised that Topper Training would effectively reduce children’s

aggressive behaviour and depressed moods and increase children's self-esteem and prosocial behaviour. To find out for which classes Topper Training was most effective we examined the moderating effects of baseline levels of social acceptance among classmates, the quality of the teacher-child relationship and the disruptive behaviour experienced by the teacher in the classroom. Specifically, we expected that Topper Training would be most effective in classes with the most negative classroom climate. This expectation is based on previous meta-analytical findings (Weisz, Sandler, Durlak, & Anton, 2005).

## Methods

### Design

The effectiveness of Topper Training was examined using a quasi-experimental design in which classrooms in a critical situation participated in Topper Training were compared to regular classrooms in the same schools. The quasi-experimental design implies that intervention classes were in more need of help than were the control classes. Although not as rigorous as a randomised trial in establishing causality, we deemed it unethical to involve classes in a "crisis situation" as control or waiting list classes (see further explanation under Procedure).

Because this training has already been implemented on a large scale in The Netherlands, we were interested in the effectiveness of the training as currently delivered in primary schools by trained psychologists. This study therefore features an effectiveness trial, examining the impact of a programme under "real-world conditions," rather than an efficacy trial, which examines trial effectiveness under optimal conditions of delivery (Flay et al., 2005, p. 153).

### Procedure

One of the institutes in the Netherlands that offers Topper Training was contacted when a teacher and/or head of the school perceived their class to be problematic and in urgent need of help. Schools were introduced to the training through adverts in local newspapers, journals for educational professionals or through people in their social network. A psychologist contacted the school to discuss the need for help. Classes were only provided with an intervention when the problems were judged to be at the classroom level and when the class was in urgent need of help from someone outside the school. This 'crisis situation' was not objectively measured with

a scale but rather was identified on the basis of the continuous climate of distrust in the classroom whereby the negative role patterns of the children were worsening, parents were negatively involved and the teacher could not handle the situation anymore. Since such a climate of distrust can impact an entire school (children, teachers and parents), an intervention was required to reverse this negative spiral. This explains our non-randomised design: it was not ethical to place these classes on a waiting list. The teacher and head of the school were asked whether they wanted to take part in this study and whether they were willing to include another class in the study as a control class. Schools were asked to choose a control class that was also problematic (if available) and otherwise to choose a class in the same age group. Children and teachers of both the intervention and control classes filled in identical questionnaires at the same points in time: prior to and one month after the intervention.

### Participants

Participants were 696 children from grades 3 to 6 in 28 classes from 14 urban primary schools in the Netherlands. All together, a total of 353 children from 14 classes were trained, while the other 343 children from 14 classes in the same schools received no training. There were no significant differences between the experimental and control groups in terms of gender,  $\chi^2(1) = 1.13, p = .289$ , and ethnicity,  $\chi^2(2) = .471, p = .790$ . The percentage of boys was 54% (control group) and 50% (intervention group). The ethnic composition of the intervention group was 84.6% Dutch, 4.5% Western migrant and 10.9% non-Western migrant. Ethnic composition of the control group was 83.8%, 5.7% and 10.5%, respectively. All children were aged between 8 and 13. Children in the control group were on average half a year older ( $M = 10.3$  years,  $SD = 1.3$ ) than those in the training group ( $M = 9.8$  years,  $SD = 1.4, t(674) = 4.29, p < .001$ ). We corrected for these age differences in the analyses. The training was given during school time, so there were no dropout cases. Children who were not present at the time of pre- or post-testing were included as incomplete cases. This was the case for 11 and 17 intervention children and 9 and 19 control children at pre- and post-test respectively. Teachers of 12 intervention and 13 control classes filled in the teacher scale (see measurements) at pre-test, while only 6 intervention and 7 control teachers did so at post-test. The reason for this attrition is not known. No pre-test differences were found between post-test completers and non-completers.

## Measurements

### Classroom level

To measure classroom climate, children filled in two subscales of the School Attitude Questionnaire (Smits & Vorst, 1990): Relationship with the teacher and Perceived social acceptance by classmates. Each subscale consisted of 16 statements from which children could choose 'This is true', 'I don't know' or 'This is not true' as their answer. Examples of questions for relationship with the teacher included: "I get along well with my teacher" and "The teacher is kind to me" and examples of perceived social acceptance by classmates included: "I get along well with my classmates" and "I often feel lonely in the classroom". The validity and reliability of these subscales was established in earlier research (Smits & Vorst, 1990). Cronbach's alpha for the subtests was respectively .83 and .90. To convert this measurement into a classroom level measurement, we used the mean scores for each class for each of the scales.

Child disruptive behaviour was measured at the classroom level as well. This short questionnaire, aimed at the teacher, consisted of 7 items and was developed specifically for this study. Rather than measuring individual student's behaviours, teachers rated the overall amount of student disruption within the classroom on a 7-point scale that ranged from "no disruption" to "a lot of disruption". The teachers used 7 items to rate the extent to which pupils waited for their chance to speak, walked around the classroom, showed disrespect, behaved restlessly, intimidated others, lacked task focus and resisted corrections to their behaviour. We used the mean score on these 7 items, ranging by definition from 1 to 7. Cronbach's alpha for this scale in our sample was .92.

### Individual level

Children filled in the Topper questionnaire ("Kanjervragenlijst" in Dutch). This questionnaire measured self-esteem (Cronbach's  $\alpha$ : .72), e.g. "I am worthless", "I think I am stupid" (both reversely coded), depressed mood ( $\alpha$ : .77), e.g. "I am sad", "I feel helpless", prosocial behaviour ( $\alpha$ : .74), e.g. "I'm good at helping others", "I am kind", and aggression ( $\alpha$ : .80), e.g. "I lie", "I scream in the classroom". Each subscale consisted of approximately 10 statements for which children could choose 'totally not true', 'not really true', 'a little true' or 'totally true' using a 4-point Likert scale. Reliability and validity was established in a large validation study ( $N = 4598$ , Topper Training Foundation, 2009). Evidence for the convergent validity of the self-esteem scale was provided by a significant, strong correlation ( $r = .67$ ,  $p < .05$ ) with the global self-esteem subscale of the Self-Perception Profile for Children (Harter, 1985). The convergent validity of the other scales was demonstrated by correlations with

parental and teacher reports in the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). The depressed mood scale correlated with Emotional Symptoms in the SDQ as reported by the mother ( $r = .47, p < .05$ ) and teacher ( $r = .43, p < .05$ ). Prosocial correlated with Prosocial behaviour in the SDQ as reported by the mother ( $r = .47, p < .05$ ) and teacher ( $r = .33, p < .05$ ). Aggression correlated with Hyperactivity Problems in the SDQ ( $r = .26, p < .05$ ) reported by the mother and teacher-reported Conduct Problems in the SDQ ( $r = .30, p < .05$ ). It is well known that parental and teacher-reported behaviour deviates from child-reported behaviour: low or even no correlation has been found between the CBCL and YSR (CBCL version for children aged 11 and older; see Achenbach, McConaughy, & Howell, 1987).

### Strategy of Analyses

Hierarchical linear modelling (HLM) was used to examine the association between undergoing the Topper Training and improvements in each outcome measure, and to examine moderators of Topper Training effectiveness. The HLM 6.06 software (Raudenbush, Bryk, & Congdon, 2008) was used to perform all of the analyses. A multilevel analysis strategy takes into account the nesting of children within classes and assumes that there is a hierarchical data set (in our case: pre-test and post-test for each pupil and pupils within classes) with one outcome variable and explanatory variables at all existing levels. In addition to accounting for hierarchical data, another advantage of multilevel analysis (as compared to an ANCOVA) is that it caters for dropouts. Multilevel analysis of repeated measures can include incomplete cases (Hox, 2010). In a multilevel model, the slope in the regression equation specifies the difference between the pre-test and the post-test scores. Thus, in this multilevel framework we tested the effectiveness of Topper Training by analysing change over time (i.e. slopes), using a dummy variable (i.e. intervention vs. control group) to predict differences in the slopes.

For the analysis of the outcome measures at the classroom level (mean score for perceived social acceptance, relationship with the teacher and teacher-rated disruptive behaviour), a two-level model was used with time (i.e. pre-test, post-test) specified at level 1 and intervention group (i.e. control vs. intervention group) specified as a level 2 predictor.

For the analyses of all outcome measures at the child level (self-esteem, depressed mood, aggressive behaviour and prosocial behaviour), a three-level hierarchical model was used with time (i.e. pre-test, post-test) specified at level 1, child gender and age specified at level 2 and intervention group (i.e. control vs. intervention group) specified at level 3. For the moderation analyses, the three-level model



was used as described above. We tested the moderation effects by examining the contribution of the interaction of intervention group with a specific variable on the slopes of change over time. As 'specific variables' we tested the classroom-level pre-test scores of perceived social acceptance, relationship with the teacher and teacher-rated disruptive behaviour. The main effect of the specific variable was always entered into the model along with the interaction with the variable intervention group. A significant contribution on the part of the interaction would indicate a moderation effect, meaning that the effectiveness of Topper Training (i.e. the difference in slopes for intervention versus control group) is different for highly disrupted versus mildly disrupted classes at pre-test.

We corrected for pre-test differences between the control and intervention groups by specifying the variable intervention group (i.e. intervention vs control) as a predictor for the model intercept. The same intercept corrections were done for age and gender (see Table 4.2 for significant intercept variance contributors). All outcome variables and predictors were standardised or recoded into binary variables (0/1). For each analysis, we omitted gender from the model when there was no significant contribution. Age was always kept in the model because of differences in age between the groups. Effect sizes (Cohen's  $d$ ) were corrected for pre-test differences (reported  $d = d$  at post-test minus  $d$  at pre-test, cf. Wilson & Lipsey, 2007).

## Results

### Pre-test Differences

Although the intervention classes were in more need of help than the control classes, no pre-test differences were found between intervention and control children at the individual level. The only pre-test differences that we found were those expected at the classroom level for social acceptance and teacher-rated disruptive behaviour (see Table 4.2). In intervention classes, children felt less accepted by their classmates at pre-test ( $M = -.65$ ,  $SD = .90$ ) than the control children did ( $M = .24$ ,  $SD = 1.03$ ;  $t(26) = 2.43$ ,  $p < .05$ ). Since all scores were standardised, these numbers indicate a difference in perceived social acceptance of almost one standard deviation (.89). As expected, teachers also perceived problematic classes as more disruptive ( $M = .91$ ,  $SD = .86$ ) than the control classes ( $M = -.41$ ,  $SD = .77$ ) at pre-test, with a pre-test difference of 1.32 standard deviation ( $t(23) = -4.04$ ,  $p < .001$ ). These differences were controlled for in further analyses.

## Effects at Classroom Level

Means and standard deviations by group at pre- and post-test are shown in Table 4.1. Table 4.2 shows the test statistics for the HLM model. The classes that received Topper Training showed a significant increase in positive classroom climate compared to the control classes (positive betas for intervention on the slope from pre- to post-test). Specifically, intervention classes showed greater improvement in the quality of the relationship with the teacher (Cohen's  $d = .66$ ,  $p < .05$ ) and in the feeling of being socially accepted by classmates ( $d = .86$ ,  $p < .01$ ) than control classes. Moreover, the trained teachers experienced a significantly larger decrease in disruptive behaviour in their classroom than the teachers in control classes ( $d = 1.55$ ,  $p < .05$ ).

Measure		Intervention group (14 classes, 353 children)				Control group (14 classes, 343 children)			
		Pre-test		Post-test		Pre-test		Post-test	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<i>(Self-) feelings</i>	Self-esteem	-.23	1.05	.27	.90	-.06	.93	.03	1.05
	Depressed mood	.23	1.06	-.25	.92	.09	.94	-.09	1.01
<i>Behaviour</i>	Prosocial behaviour	-.09	1.00	.20	.99	-.10	.99	-.01	1.00
	Aggressive behaviour	-.02	1.04	-.14	1.01	.08	.92	.07	1.02
<i>Classroom climate</i>	Social acceptance	-.65	.90	.21	.69	.24	1.03	.23	1.13
	Relation with teacher	-.09	.77	.11	1.00	.22	.89	-.25	1.33
	Disruptive behaviour (TR)	.91	.86	-.43	.67	-.41	.77	-.43	.91

*Notes.* All scales are child self-reported scales, except for the disruptive behaviour scale that was filled in by the teacher. Social acceptance and Relation with teacher are converted to classroom variables by averaging the scores for each class. All variables were standardized with  $M = 0$  and  $SD = 1$ . TR = Teacher Rated

Table 4.1 Standardized Scores at Pre-test and Post-test

Measure		Related to pre-test differences (intercept)			Related to development (slope)				
		Gender	Age	Intervention	Gender	Age	Intervention		Effect size
		$\beta$	$\beta$	$\beta$	$\beta$	$B$	$\beta$	SE	Cohen's <i>d</i>
<i>(Self-) feelings</i>	Self-esteem	-	-.01	-.17	-	.04	.40**	.13	.41
	Depressed mood	-	-.07*	.12	-	.01	-.30**	.09	.31
<i>Behaviour</i>	Prosocial behaviour	.29**	-.11**	-.04	-	.06	.23*	.10	.20
	Aggressive behaviour	-.76**	.16**	-.02	.14*	-.01	-.11a	.08	.10
<i>Classroom climate</i>	Social acceptance			-.89*			.89**	.32	.86
	Relation with teacher			-.31			.69*	.33	.66
	Disruptive behaviour (TR)			1.32**			-1.32*	.52	1.55

*Notes.* Since all variables are standardized,  $\beta$ 's are the same as B's. Gender and Intervention were coded as 0/1 variables, with 0 = boys and 0 = no intervention. All  $\beta$ 's for the slopes of Intervention are in the expected direction and thus indicate a positive intervention effect. TR = Teacher Rated \* =  $p < .05$ ; \*\* =  $p < .01$ . a:  $p = .145$ . Effect sizes denote the intervention effect in terms of standard deviations gain in the intervention group compared to the comparison group.

Table 4.2 Outcomes of Multilevel Analyses: Standardized Regression Coefficients and Effect Size

### Effects at Individual Level

As expected, the results showed that children who received Topper Training showed a significantly greater improvement in prosocial behaviour, depressed mood and self-esteem than the control children. More specifically, the multilevel analyses revealed that the intervention was significantly and positively related (positive betas for intervention on the slope from pre- to post-test) to the development of self-esteem ( $d = .41$ ,  $p < .01$ ) and prosocial behaviour ( $d = .20$ ,  $p < .05$ ). Depressed

mood decreased to a greater degree in the intervention group than in the control group ( $d = .31, p < .01$ ). No significant effect was found for aggression ( $d = .10, p = .145$ ).

### Moderation Effects

No moderation effects by baseline classroom level variables were found. This indicates that the above-mentioned differences between the intervention and control groups were not dependent on the level of perceived social acceptance, the quality of relations with the teacher or disruptive behaviour at the baseline.

## Discussion

In this study, we assessed the effectiveness of Topper Training in primary school classes with negative classroom climates. At the classroom level, the results suggest that Topper Training has a positive effect on social acceptance by classmates, the relationship with the teacher and teacher-reported disruptive behaviour. At the child level, results suggest that Topper Training has a positive effect on children's self-esteem, prosocial behaviour and depressed mood. Effect sizes ranged from .66 to 1.55 at the classroom level and from .20 to .41 at the individual level. No significant effect was found for self-reported aggression.

We are very careful to point out that our results only “suggest” effects because as a result of ethical considerations our design only allowed us to compare the development in the intervention classes in need of help to the development in ‘normal classes’, not in need for help. We still do not know how classroom climate would develop in disruptive classes in need of help that do not receive an intervention. Nonetheless, classes with a variety of problems in social interactions showed improvements in classroom climate, self-esteem, depressed mood and prosocial behaviour and these improvements were more prominent than the development of these aspects in other not-problematic classes. It was remarkable that in classes in urgent need of help social acceptance increased and disruptive behaviour decreased to normative levels. This large improvement can not reasonably be explained by regression to the mean or ‘more room for improvement’, as negative classroom climate tends to be stable or deteriorating. It seems more likely that Topper Training was responsible for the effects found. Nevertheless, it would be interesting to examine the effects in disruptive classes while comparing the development of these classes with similar classes or, more ethically, to give both groups of classes different interventions and then compare the results.

The present results suggest that classes with a negative classroom climate can benefit from a short classroom intervention that focuses on diminishing the reinforcement of negative behaviour, teaching children a non-hostile style of processing social information and involving parents in order to encourage them to take responsibility for their own and their children's behaviour. Topper Training seems to be an effective method for improving classroom climate (i.e. relationship with the teacher and perceived social acceptance by classmates), children's feelings (i.e. self-esteem, depressed mood) and child behaviour (i.e. prosocial behaviour and disruptive behaviour). Taking into account that children's behaviour is strongly influenced by group dynamics, this intervention involved the entire classroom rather than focusing only on children with problems. Although the design of the study does not allow us to make causal inferences about specific effective elements, the results do suggest that apart from targeting individual risk factors, intervention practices might benefit from including all the relevant actors in a child's direct environment, including peers, teachers, school and parents (for a review see Hong & Espelage, 2012).

Contrary to our expectations, we did not find a significant effect on children's self-reported aggression. This might be due to the low validity of self-reported aggression that has been reported in other studies (O'Shea, 2005). The teachers had a different experience however: they reported a significant decrease in disruptive behaviour of the classroom as a whole. The effect was so large that it emerged as significant even in this relatively small subsample. Nevertheless, it should be noted that only half of the teachers filled in the questionnaire at post-test. It is thus unclear how the other half of the teachers perceived their classrooms after the intervention. Although we did not find pre-test differences between completers and non-completers, it is possible that it were specifically the teachers who were not satisfied with the training who did not return the forms at post-test. The large effect on teacher-reported disruptive behaviour should therefore be interpreted with caution. Importantly, the perception of a positive effect by the teacher (as compared to the self-reported aggression) might itself be relevant in the long run, because it may result in decreased stress in teachers, which may improve teacher-child interactions (Collmann, 2013).

We did not find any moderation effects on the baseline quality of the teacher-child relationship, perceived social acceptance or disruptive behaviour as perceived by the teacher. Since all of the classes in the intervention condition were selected on the basis of considerable classroom problems, variance in class characteristics was obviously limited. Nonetheless, it seems possible that the established effects were not limited to the least problematic classes in the sample.

The current study was conducted under 'real world' conditions. The training was not launched or coordinated by the researchers. This makes it possible to generalise the results to daily intervention practice. Studies on effectiveness trials generally deliver less favourable results than studies on efficacy trials (e.g. Van der Lem, Van der Wee, Van Veen, & Zitman, 2012). Therefore, it is reasonable to expect that future Topper Training interventions will be effective as well, because they are provided under identical circumstances.

This strength of the study also brought a limitation that we already mentioned: we intervened on classes in need for help, and compared these to classes that did not show classroom climate problems. As a consequence pre-test scores were different at the class level: intervention classes had lower perceived social acceptance and higher teacher-perceived disruptive behaviour than control classes. Remarkably, the children of these classes did not differ at pre-test on individual measurements: aggression, self-esteem, depressed mood and prosocial behaviour. This is an interesting finding on its own: it is not the sum of individual behaviours of children that make a classroom require help, rather it is their feeling of being socially accepted by their classmates. This suggests - and the data also indicate this - that a training programme such as Topper Training directed towards the social interactions between the children is a good method for improving classroom climate.

A second limitation of the study is that we did not measure implementation fidelity. Although we know that the intervention was delivered by experienced and well-trained psychologists, which makes it likely that they implemented the training as intended, we cannot test the extent to which intervention fidelity might moderate the suggested effects of Topper Training in the present study.

### **Implications for School Psychological Practice**

This study provides support that Topper Training is not only effective in mental healthcare centres, as previous research has demonstrated, but may also be an effective approach in problematic classrooms in terms of reducing disruptive behaviour and depressive mood and promoting classroom climate.

The major strength of the Topper Training programme seems to be its multifaceted approach. The intervention trains individual students in non-hostile social information processing, utilises peer group techniques, such as diminished reinforcement of negative behaviour, and also involves parents, teachers and school staff. On all levels the responsibility for behaviour is stressed, along with the will to behave prosocially and the expectation of finding this will in others (positive attributions instead of hostile attributions).

These findings have implications for school psychologists working with classes with a negative classroom climate. Many school psychologists focus on individual children and train these children outside the classroom in separate groups. The results of this study advocate a more systemic approach: a peer group intervention involving the whole class, and with the involvement of parents. This investigation provides preliminary support for the effectiveness of Topper Training in enhancing classroom climate, prosocial behaviour and self-esteem, and in reducing depressed mood and disruptive behaviour in problematic primary classes.





## Chapter 5

# “I Want to Behave Prosocially and I Can Choose To Do So”: Effectiveness of Topper Training in 8- to 11-Year-Olds

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Lilian Vliek reports a conflict of interest, as a psychologist at the Topper Training Foundation. She did not deliver the intervention examined in this paper and does not have any financial interest in the outcomes of the study. Data are available upon request.



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*This study examined whether Topper Training ('Kanjertraining' in the Netherlands) reduces psychosocial problems in eight- to eleven-year-olds in a mental healthcare setting. Topper Training is a cognitive behavioural intervention in the peer group, with an additional parent component. Characterizing features include the emphasis on affirming children's prosocial intentions and feelings of responsibility for their own behaviour. To study effectiveness in routine daily practice, a quasi-experimental design with 185 intervention and 39 waiting list control children was used. Results indicated that Topper Training significantly reduced externalising and internalising problems. Children with clinical-level internalising problems at pre-test benefited more from Topper Training than children with subclinical or nonclinical internalising problems. Effect sizes were in the small to medium range ( $d = .33$  to  $.46$ ) and comparable to behavioural parent-training and cognitive-behavioural therapies in general.*

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Behavioural and emotional problems at an early age are important predictors of depression, delinquency, school dropout, and psychological disorders later in life (Romeo, Knapp & Scott, 2006). Thus, reducing these problems at an early age may prevent problems in the future (Van Lier, 2002). Although an increasing number of indicated prevention programmes for children have demonstrated efficacy, the effect sizes are generally found to be modest (Wilson & Lipsey, 2007). Moreover, the modest estimates of effect sizes may be too positive, as most programmes have been tested for efficacy in research trials only, and comparatively few have been tested for effectiveness in the real-world conditions in which they will eventually be used. In a meta-analysis, only 32 of the 249 included studies concerned effectiveness of routine practice (Wilson and Lipsey, 2007). Studies on effectiveness trials generally deliver less favourable results than studies on efficacy trials (e.g. Van der Lem, Van der Wee, Van Veen, & Zitman, 2012). Moreover, it is important to test the effectiveness of programmes that are already used on a large scale (Dodge, 2011). Topper Training is such a programme.

This study aims to test the effectiveness of Topper Training ('Kanjertraining' in the Netherlands; Topper Training Foundation, 2007a; 2007b), a widely-implemented training programme in the Netherlands including both established evidence-based effective elements (i.e., cognitive behavioural strategies, parent involvement, group training) and two additional characterizing elements: activating children's latent intentions to behave prosocially and making children aware of their responsibility

for their own behaviour. In addition, we aimed to test possible moderating effects of gender, age, and severity of psychosocial problems at pre-test. These aims are relevant to research and practice. Effect sizes provide an indication of the fruitfulness of the combination of intervention elements of Topper Training. Because this study was conducted under real-world conditions and because Topper Training is widely implemented in 30 mental healthcare centres throughout the Netherlands, results can be generalised to daily practice.

Previous research has shown that cognitive behavioural techniques can effectively reduce behavioural and emotional problems (see Brosnan & Carr, 2000; Sukhodolsky, Kassinove & Gorman, 2003). Training children in peer groups (Salmivalli, 1999) and involving parents and the school environment are also found to be effective strategies (Greenberg, Domitrovich & Bumbarger, 2001). Specific effective elements of cognitive behavioural training include modelling, role-play, giving feedback, and assigning homework (Sukhodolsky et al., 2003). In a recent meta-analysis (Carr, 2009), the combination of behavioural parent training with child training was found to reduce behaviour problems. Effective strategies of behavioural parent training were helping parents develop skills to encourage children's prosocial behaviour (through attending, reinforcement, and engaging in child-directed interactions) and to discourage antisocial behaviour (through ignoring, the use of time-outs, contingency contracts, and engaging in parent-directed interactions). Effective elements in child therapy were training in self-regulation skills, such as managing emotions and social problem solving. Topper Training includes all of these effective elements, with two additional elements.

Topper Training's first characterising feature is its emphasis on the idea that children are intrinsically motivated to show prosocial behaviour. This intrinsic motivation 'to do good' has gained status as a potential universal motivational mechanism underlying adult cooperation (Fehr & Fischbacher, 2003), as has been shown in, for example, capuchin monkeys (De Waal, Leimgruber, & Greenberg, 2008) and human infants (Dunfield & Kuhlmeier, 2010). However, only two studies tested the effectiveness of actively triggering this prosocial inclination in *youths*. The results demonstrated that just making adolescents aware of their own personal values (their prosocial desires) with a brief writing exercise, improved school performance (Cohen, Garcia, Apfel & Master, 2006) and reduced aggression temporarily (Thomaes, Bushman, Orobio de Castro, Cohen & Denissen, 2009). In both studies, adolescents completed a 15-minute assignment to reaffirm their sense of self-integrity by seeing themselves as good, virtuous, and efficacious.

In a similar fashion, Topper Training activates children's intrinsic motivation 'to do good.' Parents learn to think about and approach children by appealing to the child's own desire to behave prosocially. The trainer models this to parents by being surprised when a child misbehaves and by asking children whether the specific behaviour was in line with the child's intention. Additionally, the children experience the consequences of four types of behaviour in role-plays. Children experience that "Topper (prosocial) behaviour" has the highest benefit (this behaviour results in social contact, acceptance by others, halting a bully, etc.). The advantage of this approach is that the child's behavioural changes are intrinsically motivated. In the rare cases that a child claims to have negative intentions, the trainer shows disbelief and sets boundaries. "I do not believe that you really want this. If this *is* your intention, I suggest that you stop this now because this is not allowed here." The trainer shows his or her authority, but only after making the child conscious of his desire and responsible for his behavioural decision.

The second element of Topper Training is explicitly evoking feelings of responsibility. Rather than attributing one's behaviour to others or to bad circumstances, and rather than seeing problems as something the intervention should solve, Topper Training makes the child responsible for its own behaviour (Topper Training Foundation 2007a; 2007b). Responsibility is defined here as one's capacity to choose to behave in a certain way. Self-efficacy seems to be a prerequisite for being able to take responsibility for one's behaviour. However, self-efficacy refers specifically to one's own belief of being able to perform (Bandura, 1994), whereas responsibility requires the additional belief that one can personally decide how to behave. Although the role of self-efficacy has been emphasized previously (Bandura, 1994), it has remained underrepresented in interventions for children (for another training programme on responsibility, see Positive Behaviour Support: Horner, Sugai, Todd, & Lewis-Palmer, 2005). While some interventions help children develop skills and understand how problems can be solved prosocially, less attention is paid to teaching children to take responsibility for their own choices. We argue that a feeling of responsibility is necessary to control one's behaviour, to work towards more prosocial behaviour, and therefore to change one's behaviour.

Topper Training uses a clear visual method to make children aware of their responsibility to choose their own behaviour in social situations. Stories and role-plays are based on four coloured caps with pictures of animals, each representing a different type of behaviour. Children and parents become aware of, and can easily categorise their own behaviour in, the four caps. Children and parents learn that they can choose to 'wear' another cap. The key message is that a child is not destined to have a particular role (or cap, or problem, or diagnosis), but behaves

according to one role until he chooses to take on another role. Children and parents learn to give up their feelings of being a victim. The lessons are sequenced so that children gradually learn that they can choose their own behaviour.

In a previous quasi-experimental study (Vliek & Orobio de Castro, 2010), the effectiveness of Topper Training was established in a classroom context. Eleven classes designated as problematic by the teacher and/or the head of the school were trained by a psychologist. Parents were actively involved and the teachers were coached. The intervention consisted of an average of 15 training hours. The trained classes were compared to control classes from the same schools. Topper Training was found to be effective in reducing self-reported aggression and depressive thoughts and in increasing well-being, self-esteem and relationships with classmates and the teacher. Effect sizes varied between .17 and .37, and varied between .33 and .78 for the 25% of children with the lowest pre-test scores (Vliek & Orobio de Castro, 2010).

In following up on this previous work, the main aim of the present study was to examine the effectiveness of Topper Training in mental healthcare centres in the way it is commonly administered by psychologists. The target population in these centres consists of children with mild to severe problems in social interaction. The training was aimed at decreasing both internalising and externalising problems. By studying specific moderators including sex, age, and severity of problem behaviours at baseline, we aim to pinpoint which children will profit most from the training.

We expected that both children with internalising and externalising problems would benefit from the training. Topper Training assumes that children with internalising and/or externalising behaviour do not prefer to behave problematically. Therefore, we expected that practising Topper Training behaviour, reaffirming their positive desires, and experiencing the consequences of behaviour together with stimulating self-perceived responsibility for their behavioural choices, would lead to a decrease in psychosocial problems. We hypothesized that children with clinical-level problems would show larger reductions in problems, compared with children who had milder, subclinical levels of problems at baseline, as was found in a meta-analysis (Weisz, Sandler, Durlak, and Anton, 2005).

## Methods

### Procedure

We examined the effectiveness of Topper Training with a quasi-experimental design. Children enrolled in the intervention were compared with a waiting list control group. Families came to the training in the usual way: through information from school advice boards, family doctor advice, adverts in local newspapers, or people in their social network. No family doctor reference was necessary. Parents of children aged 8 to 11 years who entered one of the participating mental healthcare centres in the Netherlands between September 2007 and September 2008 were asked to participate in the study. Directly after applying for the training, both parents received a questionnaire at home to fill in and send back (see measures). After returning the questionnaires, parents were invited for an interview to examine whether the training suited the child. In general, the training was considered suitable when a child experienced internalising and/or externalising problems in social interactions and when both the child and the parents were motivated for the training. This procedure was exactly the same as the daily practice of the training without the study. Trainers reported that it was very rare that the training was not considered suitable. An example of a reason was that the child and the parents did not experience problems because they just finished another training. Since these were only rare cases (less than 1%), there was low chance that this limited the generalisability of the results. Parents gave their written active consent to participate with their child. After the last session, parents were given the same questionnaires again to fill in at home and to send back within a month. Completion took 15-20 minutes. Parents received a report with the results of their child. No other compensation or reward was given. Parents paid for the training as usual.

The control children came to the institutes in the same way as the intervention children. The only difference was that at the time of application, a training had already started or the upcoming training group was full, so parents and children had to wait. Parents of the waiting list control group filled in the questionnaires directly after applying (just like the intervention group). They filled in the same questionnaires again just before the start of their training. Date of entry could not systematically influence the assignment to the control or intervention group because the training started on various dates in each mental healthcare centre. Severity of child's problems was no criterion for faster inclusion.

## Topper Training Content

Topper Training was delivered by trained psychologists with 1 to 11 years experience giving this training,  $M = 4.0$  years,  $SD = 2.9$ . All psychologists were originally trained at the Topper Training Foundation in Almere, the Netherlands, and all were licensed to give the training. The participating institutes were all private institutes.

Topper Training consisted of ten group sessions of one and a half hours given every two weeks. Training groups held a maximum of 15 children with internalising and/or externalising problems. In the first half hour, children and parents were trained together, after which parents and children were trained in separate groups. After each meeting, parents were given background information and homework assignments to practice at home. Sessions followed a detailed protocol. Each session started with rehearsal of exercises of the past lessons. Thereafter, the trainer introduced the theme of the lesson through a story. Children practiced with social skills and made use of the four coloured caps (see introduction) in role-plays. Children discussed social themes and dilemmas. Every session ended with a physical exercise to increase trust. The first three lessons were directed at basic social skills: presenting oneself, eye contact, giving and receiving compliments, and expressing one's feelings. In the fourth lesson, children practiced to react to bullying and troublesome situations. Special attention was paid to bystander behaviour: children practiced to ignore or walk away from negative behaviour. Themes of the fifth, sixth, and seventh lessons were showing interest in one another, trust, and friendship respectively. In the seventh and eighth lesson children gave each other feedback: children received suggestions from their peers for behavioural change. The ninth lesson reminded children of the people who love them and taught them that they are worthwhile for those people. "You don't have to be loved by everyone to be worthwhile. Some people don't like you and that is fine." The last session was the diploma ceremony. Parents were made aware of their role as model for their child and practiced the same skills as the children. Moreover, a Topper way of thinking and acting as a parent was taught wherein children's positive intentions are affirmed and children's responsibility is stimulated by reducing psychological control over the child.

## Participants

Parents of 542 children filled in the questionnaire at pre-test. Of those 64.2% filled in the questionnaires at post-test ( $N = 348$  completers). Completers scored significantly lower on total problems, externalising problems, attention and aggression at pre-test than non-completers. The time between the pre- and post-test (pre-post-test interval) was limited to 200 days in the control group, but varied in the intervention group (up to 467 days). To make the groups more comparable,



we only selected the children that had pre-post-test intervals between 70 days (minimal duration of the training) and 200 days. This excluded 2 control children and 122 intervention children. The excluded children scored significantly higher on internalising and anxious depressed problems at pre-test than included children. No significant differences in effect (pre-post test differences) were found between included and excluded children. The final study sample consisted of 224 children: 185 intervention and 39 control children. The attrition at post-test and the selection of pre-post-test intervals between 70 and 200 days resulted in an overrepresentation in the data of children with less severe externalising and internalising problems.

The intervention group consisted of 185 children aged 8 to 11 years,  $M = 9.9$ ,  $SD = 1.2$ , and their parents. The control group consisted of 39 children aged 8 to 11 years,  $M = 9.8$ ,  $SD = 1.1$ , and their parents. The percentage of boys in the intervention and control groups was 54.6% and 64.1%, respectively. Age ( $t(222) = .697$ ) and gender ( $Chi^2(1) = 1.183$ ) composition did not differ between groups. Participants were predominantly Western European and came from urban areas. Social economic status (SES) did not differ between the intervention ( $M = .59$ ;  $SD = .89$ ) and control group ( $M = .66$ ;  $SD = .60$ ),  $t(222) = -.483$ . On average, participants started the training with subclinical total problems on the Child Behavioural Checklist,  $M = 60.52$ ,  $SD = 7.69$ , of which internalising problems were more prominent,  $M = 62.11$ ,  $SD = 8.37$ , than externalising problems,  $M = 55.55$ ,  $SD = 9.29$ . Of the 185 intervention children, 38% scored in the clinical range on total problems at pre-test, 49% scored clinical on internalising problems, and 21% on externalising problems. In the control group these percentages were 36%, 44%, and 18%. These distributions did not significantly differ between the groups (total:  $Chi^2(1) = .052$ ; internalising:  $Chi^2(1) = .404$ ; externalising:  $Chi^2(1) = .194$ , all  $p > .05$ ). The mean time between pre- and post-test was longer in the intervention group ( $M = 157$  days,  $SD = 28$ ) than in the control group ( $M = 125$  days,  $SD = 36$ ),  $p < .001$ .

## Measures

Problem behaviour was assessed using the Child Behavioral Checklist (CBCL; Achenbach, 1991). The CBCL is a widely used, standardized assessment instrument for psychosocial problems in children aged 6 to 18 years. A study by Ivanova and colleagues (2007) demonstrated that the CBCL shows remarkable consistency in its psychometric properties across more than 30 countries. Raw scores were converted into CBCL t-scores. For the broad-band problems (internalising and externalising problems) and the total problem scale, CBCL normative data define t-scores between 60 and 63 as subclinical and t-scores higher than 63 as clinical. For the narrow-band syndrome scales, a t-score of 67 to 70 is subclinical, and scores higher than 70 are clinical.

Parents filled in the CBCL at pre-test and post-test. At pre-test, fathers' response rate was 90% in the intervention group and 92% in the control group. For mothers this was 99% and 100%. At post-test, the fathers' response rate was 72% and 87%, and the mothers' response rate was 98% and 100%, for the intervention and control group respectively. Parent scores were strongly correlated, for internalising  $r = .62$ , externalising  $r = .70$ , and total problems  $r = .62$ . These scores were subsequently aggregated into a mean parent score. This increased the power of the study since fewer tests had to be conducted<sup>1</sup>. We combined the scores into a mean score when both mother and father scores were present. When only one parental score was available, that score was used.

Social economic status was derived from an organisation in the Netherlands (Central Bureau for Statistics) that coupled postal codes to education, income and occupation. This SES measure varies from -4 to 4 (low to high SES) and has a mean of 0 in the Netherlands.

## Results

Means and standard deviations at pre- and post-test are presented in Table 5.1. At pre-test, the intervention and control groups did not differ on any of the CBCL scales. Repeated measures MANOVA's revealed significant intervention effects, as indicated by group (intervention/control) and time (pre-test/post-test) interactions, for each of the three broad-band variables. The intervention group showed significantly larger decreases than the control group on total problems,  $F(1, 222) = 9.89, p < .01$ , Cohen's  $d = .46$ , externalising behaviour,  $F(1, 222) = 6.60, p < .05, d = .33$ , and internalising behaviour,  $F(1, 222) = 6.02, p < .05, d = .39$ , see Figure 5.1. We found no correlations between pre-post-test interval and the effects. To be sure, we entered pre-post-test interval as covariate to all analyses. Results were the same as reported.

We found significant intervention effects for the narrow-band scales aggression,  $F(1, 222) = 4.89, p < .05, d = .36$ , withdrawn/depressed,  $F(1, 222) = 4.96, p < .05, d = .37$  and social problems,  $F(1, 222) = 7.86, p < .01, d = .46$ . Children in the intervention group showed a larger decrease in these problem behaviours than

<sup>1</sup> Analyses of mothers' and fathers' scores separately revealed the same significant effects for mother as for the aggregated scores. The effect sizes were similar or larger for mothers separately. Intervention effects reported by father revealed significant effects for total problems, externalising problems and aggression. Effect sizes were similar to the aggregated scores (.41, .40, .30). Effects of internalising, withdrawn depressed and social problems did not reach significance in fathers, although fathers still reported small positive effect sizes (.34, .39, .34).

children in the control group. Furthermore, we found marginally significant effects for attention problems,  $F(1, 222) = 3.59$ ,  $p = .059$ ,  $d = .26$ , anxious/depressed problems,  $F(1, 222) = 2.91$ ,  $p = .089$ ,  $d = .29$ , and somatic problems,  $F(1, 222) = 3.53$ ,  $p = .061$ ,  $d = .30$ . We found no significant effects for rule-breaking behaviour  $F(1, 222) = .13$ ,  $p = .852$ ,  $d = .08$ , or thought problems,  $F(1, 222) = 2.52$ ,  $p = .146$ ,  $d = .26$ . Effect sizes (Cohen's  $d$ ) were corrected for small pre-test differences (reported  $d = d$  at post-test minus  $d$  at pre-test, cf. Wilson & Lipsey, 2007).

	Intervention group ( $n = 185$ )				Control group ( $n = 39$ )				Group* Time Inter- action	Effect size
	Pre-test		Post-test		Pre-test		Post-test			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Total Problems	60.52	7.69	54.01	8.55	60.36	6.77	57.72	7.87	9.89**	.46
Externalising	55.55	9.29	50.82	8.91	55.55	9.60	53.87	9.89	6.60*	.33
Aggressive	58.22	7.15	54.97	5.87	58.49	8.56	57.44	7.69	4.89*	.36
Rule-breaking	55.45	5.38	53.24	4.67	55.77	5.83	53.86	4.10	.13	.08
Attention Problems	58.36	6.72	55.96	6.10	58.32	5.92	57.50	5.76	3.59a	.26
Thought Problems	59.08	6.93	55.72	6.31	59.71	8.00	57.96	7.30	2.52	.26
Internalising	62.41	8.37	55.62	9.39	61.22	8.91	58.01	10.26	6.02*	.39
Anxious Depressed	62.11	7.73	56.60	8.22	61.21	7.54	58.03	7.74	2.91b	.29
Withdrawn Depres.	63.73	7.74	59.02	7.00	62.83	7.37	60.81	7.70	4.96*	.37
Somatic Complaints	57.46	6.73	55.20	5.66	57.68	8.34	57.32	8.83	3.53c	.30
Social Problems	63.18	7.48	58.30	7.42	61.74	6.81	60.28	6.65	7.86**	.46

*Note.* \*:  $p < .05$ , \*\*:  $p < .01$ , a:  $p = .059$ , b:  $p = .089$ , c:  $p = .061$

Table 5.1 Intervention effects on parent-rated psychosocial problems of the children

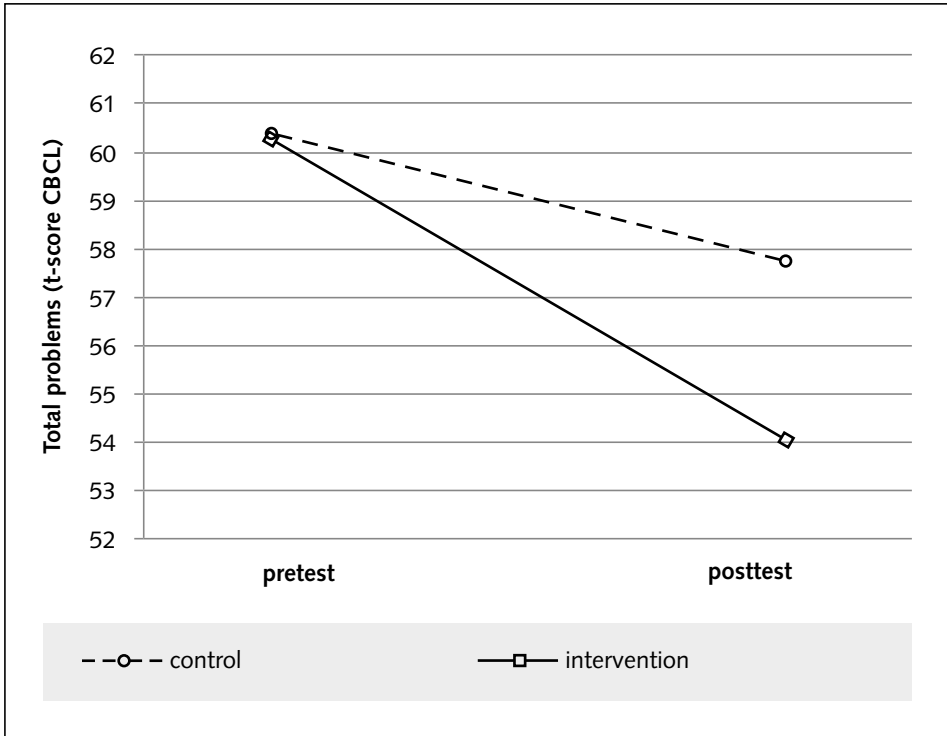


Figure 5.1. Intervention effect of Topper Training on total problems

We examined moderation effects for the broad-band scales total problems, externalising problems, and internalising problems, all as moderators and outcomes. For each of these three outcome measures, three 2x2x2 repeated measures ANOVA's were conducted with group (intervention vs. control) and moderator (clinical vs. below clinical level on each CBCL broad-band scale) as between-subjects factors and time (pre-test vs. post-test) as a within-subjects factor. The only significant moderation effect was the three-way interaction of time with group with severity of internalising problem behaviour at pre-test for the outcome of internalising behaviour,  $F(1, 220) = 5.83, p < .05$ . Post-hoc analyses of this interaction revealed a significant and large intervention effect on internalising problems for children with clinical internalising problems at pre-test ( $d = .87$ ) and a non-significant intervention effect for children with less severe internalising problems at pre-test ( $d = .06$ ). This interaction is depicted in Figure 5.2. We found no significant moderation effects for gender or age.

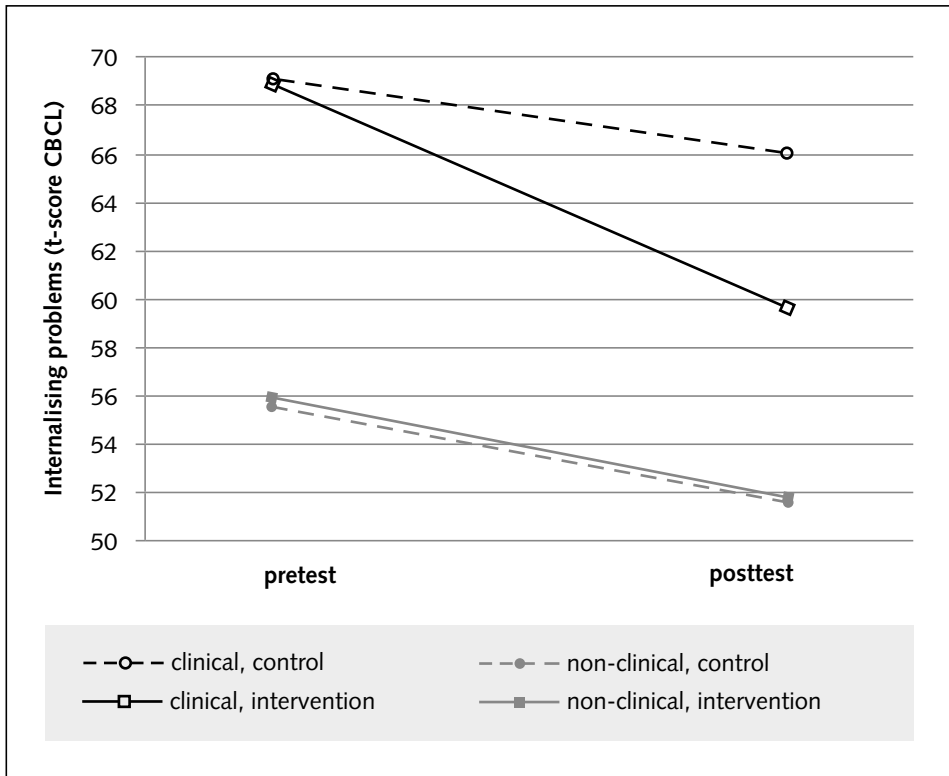


Figure 5.2. Moderation effect of internalising problems at pre-test

## Discussion

The present study is the first evaluation of the effectiveness of Topper Training in a mental healthcare setting, directed to children and their parents. Results give support to the effectiveness of Topper Training on internalising and externalising problems in eight- to eleven-year-old children. More specifically, aggression, withdrawn-depressed behaviour and social problems according to parents were all significantly reduced. Effect sizes were in the small to medium range ( $d = .33$  to  $.46$ , Cohen, 1988). Attention, anxious depressed problems and somatic problems were also reduced after the training, but the intervention effects were marginally significant when compared to control children, with effect sizes between  $.26$  and  $.30$ .

These findings indicate that cognitive behavioural techniques taught in a peer group with an additional parent training and a focus on prosocial intentions and responsibility of children is effective for children with psychosocial problems. There

was no moderation effect for age or gender, which suggests that young children (8 years old) profit as much as older children (up to 12 years old), and boys profit as much as girls from this kind of intervention. The intervention seems to be more suitable for children with clinical internalising problems than for children with nonclinical internalising problems. No differences were found in improvement of children with clinical and nonclinical externalising problems.

These effects were measured after ten lessons, taking about 5 months in total. Due to the attrition at post-test and the selection of pre-upost-test intervals between 70 and 200 days, there was an overrepresentation in the data of children with less severe externalising and internalising problems. We do not know the reasons for the attrition. Since the attrition was selective for parents of children with more severe externalising problems, a likely explanation might be that parents experienced more stress themselves in PARENTING (caused by or leading to the child's problems) which might lead to less motivation or time to fill in the questionnaires after the training. Because other studies found larger effects for more severe problems (Weisz et al., 2005), the underrepresentation of children with more severe problems in our study might have lowered the measured effect sizes.

The magnitude of our effect sizes is in the small to medium range (Cohen, 1988). However, they are relatively large compared to the mean effect size of .29 of selected/indicated school-based programmes, as reviewed by Wilson and Lipsey (2007). The indicated programmes their review reports on, contain behavioural strategies, cognitively oriented interventions, social skills training, counselling, therapy, and peer mediation. Thus, none of these programmes included a parent training and these programmes were aimed at different age ranges and were of a different duration. Our effect sizes are comparable to effect sizes of behavioural parent training (mean effect size: .47) and cognitive behavioural therapy (mean effect size: .35; McCart, Priester, Davies, & Azen, 2006).

Dodge (2011) argues that findings from laboratory science cannot easily be translated into community contexts because the context matters. This fact is not sufficiently taken into account in many translation efforts from research to practice. The present study was conducted under real-world conditions with routine delivery of a training that is already widely implemented, which make the results directly applicable to community samples. The real-world conditions under which this study was performed, however, also bring with them some limitations. First of all, children were not randomly assigned to either the intervention or control group. Allocation happened on the basis of date of referral. Since the psychological institutes started with their training on apparently random dates, this did not yield any systematic difference between groups, as parents and psychologists could not affect group

assignment. Indeed, no differences were found at pre-test on any of the scales and no differences in age, gender or SES occurred. This implies that the effects we found cannot be due to differences in these child characteristics or behaviour at pre-test between the two groups.

A second limitation is that we did not measure implementation quality. Although we know that in all cases the intervention consisted of ten lessons, and that the intervention was given by experienced psychologists, we did not measure fidelity and did not register child or parent adherence systematically. This information would enable us to correlate the effects of the intervention to implementation quality, which can make causal inference stronger.

A third limitation is the use of only one informant. We did not collect information from the children, the peers or the teacher. This would have given a more complete picture of the behaviour and feelings of the children. This is important here since involved parents are likely to report favourable results, particularly in the setting of mental healthcare centres. Another explanation for the found effects might be that the intervention taught parents to look at their child's behaviour more positively, while the actual behaviour did not change. The effectiveness of Topper Training in the classroom setting (Vlieg & Orobio de Castro, 2010) was measured by self-report questionnaires. Effect sizes (between .33 and .78) were similar (or even larger) than the current effects, which indicate that Topper Training can be successful in school and in a mental healthcare setting as reported by children and parents respectively. In conclusion, our results suggest that interventions that include cognitive behavioural strategies in the peer group with parent involvement, together with an emphasis on activating children's latent intentions to behave prosocially and making children aware that they are responsible for their own behaviour, can be effective in reducing internalising and externalising problem behaviour in 8 to 11 year-olds. In future studies it would be interesting to study the long-term effects of Topper Training. The current design did not allow us to compare long-term effects since the control group received the intervention shortly afterwards. Moreover, because the design of this study does not allow for conclusions about which of the intervention elements are responsible for the overall effects, future research might examine whether increases in children's prosocial intentions and feelings of responsibility mediate the intervention effect.





## Chapter 6

# A Randomised Trial of Parent-Child Topper Training: Effects on Psychosocial Problems, Self-esteem and Victimisation

Submitted for publication:

Vliek, L., Overbeek, G., & Orobio de Castro, B. (submitted). A randomised trial of parent-child Topper Training: Effects on psychosocial problems, self-esteem and victimisation.

Lilian Vliek reports a conflict of interest, as a psychologist at the Topper Training Foundation. She did not deliver the intervention examined in this paper and does not have any financial interest in the outcomes of the study. Data are available upon request.



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*The effectiveness of indicated cognitive behavioural interventions in reducing psychosocial problems may be enhanced by targeting the prosocial intentions and responsibility of children. In this trial, we examined the effectiveness of the parent-child intervention Topper Training, whose objective corresponds to the statement above. A randomised controlled trial with a waiting list control group was conducted using 132 children with mild to severe psychosocial problems. Children were randomised (3:2 ratio) into 77 intervention and 55 waiting list children (50% boys; age = 8-11 years, 77% Dutch, 5% Western migrant, 18% non-Western migrant). GLM repeated measures analyses yielded significant intervention effects directly after the training on parent-reported (but not teacher-reported) emotional symptoms (Cohen's  $d = .60$ ), peer relationship problems ( $d = .28$ ), and impact of these problems ( $d = .56$ ). Significant effects were also found for child-perceived victimisation ( $d = .64$ ), self-esteem ( $d = .46$ ) and teacher-reported conduct problems ( $d = .35$ ). No significant effects were found for prosocial behaviour and bullying. Within-participant  $t$ -tests in the intervention group between post-intervention and follow-up indicated that effects extended over a six-month follow-up period. Depression decreased significantly from post-test to follow-up. In conclusion, children with mild to severe internalising and externalising problems can benefit from a 10-session intervention with cognitive behavioural elements that affirms children's prosocial intentions and their ability to choose how to behave in a variety of stressful social situations. The effects persisted over a 6-month period and parent-reported effects on emotional, conduct problems and impact of the problems and child-reported effects on self-worth were of clinical relevance.*

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## Introduction

*"No one is born hating another person [...]. People must learn to hate, and if they can learn to hate, they can be taught to love, for love comes more naturally to the human heart than its opposite."*

- Nelson Mandela, *Long Walk to Freedom*

Nelson Mandela was of the opinion that people have a natural desire to be loving and caring towards others. Indirect empirical support for this notion comes from primatologist Frans De Waal (2013) who observed chimpanzees soothing distressed neighbours and bonobos sharing their food. Although this desire for 'morality' might come naturally to the human heart, life challenges are ubiquitous, and so responding to these challenges in a positive way needs to be taught. Children can show aggressive reactions but also depressive and withdrawn reactions to daily life challenges such as bullying, denial or ambiguous social situations (Crick & Dodge, 1994). These early conduct and emotional problems are found to be important predictors of depression, delinquency, school dropout and psychological disorders later on in life (Romeo, Knapp, & Scott, 2006).

Reducing these problems at an early age with indicative preventive interventions may prevent escalation into severe problems that are harder to treat (Van Lier, 2002) and save society from the associated costs and risks (Scott, Knapp, Henderson, & Maughan, 2001). Although an increasing number of indicated prevention programmes for children have demonstrated efficacy, the effect sizes are generally found to be modest (Wilson & Lipsey, 2007). Moreover, in actual practice, effects tend to be smaller than in research trials (e.g. Van der Lem, Van der Wee, Van Veen, & Zitman, 2012). Therefore, we need to find more effective ways of reducing emotional and conduct problems for children with mild to severe problems. Also, when doing so, we need to test whether the effects can be realised in actual daily practice.

Previous research has shown that indicative prevention programmes using cognitive behavioural techniques can effectively reduce behavioural and emotional problems (see Brosnan & Carr, 2000; Sukhodolsky, Kassinove, & Gorman, 2003). Specific effective elements of cognitive behavioural programmes include modelling, role-play, giving feedback and assigning homework (Sukhodolsky et al., 2003). Training children in peer groups (Salmivalli, 1999) and involving parents and the school environment are also found to be effective strategies (Greenberg, Domitrovich, & Bumbarger, 2001). In a recent meta-analysis (Carr, 2009), the combination of child training with behavioural parent training was found to reduce behavioural

problems. Effective elements in child therapy were training in self-regulation skills, such as managing emotions and social problem solving. Effective strategies for behavioural parent training included helping parents develop skills to encourage children's prosocial behaviour (i.e. through attending, reinforcement of and engaging in child-directed interactions) and to discourage antisocial behaviour (i.e. through ignoring such behaviour, the use of time-outs, contingency contracts and engaging in parent-directed interactions).

We aimed to further improve the effectiveness of indicative preventive interventions by adding two innovative elements to those mentioned above. The first additional effective way to reduce emotional and conduct problems in children may be to devote more attention to their latent intention to behave prosocially (as Mandela and De Waal stated). The second is to strengthen children's sense of personal responsibility: their capacity to choose to behave in a certain way. In the Netherlands, Topper Training ("Kanjertaining" in Dutch; Topper Training Foundation, 2007) specifically targets two key areas: children's prosocial intentions and consciousness of their own role and responsibility in handling social situations. This study constitutes the first randomised controlled trial on the effectiveness of the indicative preventive intervention known as Topper Training.

### **Prosocial Intentions and Responsible Behaviour**

The first additional element that is potentially effective in Topper Training is based on the idea that children are intrinsically motivated to act prosocially. This intrinsic motivation "to do good" has gained in status as a universal motivational mechanism underlying cooperation (Fehr & Fischbacher, 2003) - evidence for the existence of this motivational mechanism has come from studies on capuchin monkeys (De Waal, Leimgruber, & Greenberg, 2008) as well as on human infants (Dunfield & Kuhlmeier, 2010). Previous research has shown the potential of actively triggering this prosocial inclination in youths. Specifically, making adolescents aware of their own personal values (their prosocial desires) with a brief writing exercise improved school performance (Cohen, Garcia, Apfel, & Master, 2006), reduced aggression temporarily (Thomaes, Bushman, Orobio de Castro, Cohen, & Denissen, 2009) and increased prosocial behaviour (Thomaes, Bushman, Orobio de Castro, & Reijntjes, 2012). In these studies, adolescents completed a 15-minute assignment to reaffirm their sense of self-integrity by seeing themselves as striving to be good, virtuous and efficacious. In a similar fashion, Topper Training activates children's intrinsic motivation "to do good". Parents learn to think about and approach children by appealing to the child's own desire to behave prosocially. The trainer models this to parents by getting them

to act surprised when a child misbehaves and by challenging children on whether the specific behaviour was in line with their intention. Additionally, children experience the consequences of four types of behaviour in role-plays. Children experience that “Topper behaviour” (prosocial behaviour) results in social contact, acceptance by others, halting a bully, etcetera. The advantage of this approach is that the child’s behavioural changes are intrinsically motivated. In the rare case that a child claims to have negative intentions, the trainer shows disbelief and sets boundaries. The trainer thus makes children conscious of their desire and makes them responsible for their own behavioural decision.

A second element included in Topper Training to promote effectiveness is explicitly evoking feelings of responsibility. Rather than attributing one’s behaviour to others or to bad circumstances, and rather than seeing problems as something the intervention should solve, Topper Training makes the child responsible for his own behaviour (Vliek & Orobio de Castro, 2010). Responsibility is defined here as one’s capacity to choose to behave in a certain way. It is conceptually related to the notion of self-efficacy. However, self-efficacy refers specifically to one’s own belief in being able to perform a behaviour (Bandura, 1994), whereas responsibility requires the additional belief that one can personally decide how to behave. The belief that social attributes are not fixed but have the potential to change seems to be a prerequisite for taking responsibility. More concretely: the belief “this is how I am, and how I always will be” prevents one from taking responsibility for one’s own behaviour, because this idea assumes that one has no choice: one will react depending on how the environment will act or how the situation will be. Evidence for this idea comes from Yeager and Dweck (2012), who showed that adolescents who were taught that they can develop their own social qualities (instead of being stable personality characteristics) displayed lower aggression and stress in response to peer victimisation and exclusion and also showed enhanced school performance. While responsibility is a key ingredient in some general approaches to adult interventions (e.g. solution focused) and in community work with adolescents (e.g. volunteering), appealing to a sense of responsibility in younger children is less common. While some interventions help children to develop skills and understand how problems can be solved prosocially, less attention is paid to teaching children to take responsibility for their own choices. The assumption in Topper Training is that a feeling of responsibility is necessary if children are to control their own behaviour, to work towards more prosocial behaviour, and therefore to change their behaviour. Topper Training uses a clear visual method to make children aware of their responsibility to choose their own behaviour in social situations. Stories and role-plays are based on four coloured caps with pictures of animals, each representing a different type of behaviour. Children and

parents become aware of and can easily categorise their own behaviour in the four caps. Children and parents learn that they can choose to “wear” a different cap. The key message is that a child is not destined to have a particular role (or cap, or problem, or diagnosis), but behaves according to one role until he chooses to take on another role. The sessions are sequenced so that children gradually learn that they can choose how to react in a range of different social situations.

### Previous Research on Topper Training

Previous research into daily practice alludes to the positive effects of Topper Training in a classroom context and in a mental healthcare setting. In a quasi-experimental study, the effectiveness of Topper Training was established in a classroom context (Vliek, Overbeek, & Orobio de Castro, under review). Classes (third to sixth grade) designated as problematic by their teacher and/or the head of the school were trained by a psychologist. Parents and heads of schools were actively involved and the teachers were coached. The intervention consisted of an average of 15 training hours. Fourteen trained classes ( $n = 353$ ) were compared to fourteen control classes ( $n = 343$ ) from the same primary schools. Multilevel analyses revealed medium to large effects on classroom climate: relationship with the teacher, perceived social acceptance by classmates and disruptive behaviour according to the teacher. Cohen's effect sizes ranged from .66 to 1.55. At the individual level, trained children showed improvements in self-reported prosocial behaviour, depressed mood and self-esteem when compared to the control children. Effect sizes ranged from .20 to .41. In another quasi-experimental study in a mental healthcare setting (Vliek, Overbeek, & Orobio de Castro, 2014), 185 trained children were compared to 39 waiting list control children (all between 8 and 11 years old). The training was directed at children with mild to severe psychosocial problems and their parents. After ten 90-minute sessions, the children showed improvements in parent-reported internalising and externalising problems, aggression, withdrawn-depressed behaviour, social problems and their problems in general. Marginally significant effects were found for attention problems, anxious-depressed problems and somatic problems. Effect sizes ranged from .26 to .46. These studies were done under real-world conditions: participants applied for the training as normal and the training was given as normal. An advantage of this approach is that the results are easily transferrable to daily practice. This is crucial because Topper Training is already widely implemented in the Netherlands (in about 20 to 25% of the primary schools and in approx. 30 mental healthcare centres). However, the quasi-experimental design of both studies did not allow strong conclusions to be drawn on the causal effect of the intervention. Specifically, in

the first study, the experimental and control group were not identical in terms of classroom climate at baseline. This means that the potentially significant effects of the Topper Training in this study can be explained on the basis of other variables related to classroom problems, such as teacher behaviour. To overcome this limitation, the current study uses a randomised control trial. One advantage of a randomised controlled trial is that the intervention and control group are identical at baseline, since children are randomly assigned to the groups.

## The Present Study

This study investigates the effectiveness of Topper Training under real-world conditions, while simultaneously providing a better comparison between control and training group by using a randomised controlled design. Other strengths of the present study are that information is obtained from parents, teachers and children as multiple informants and that an estimate of follow-up effects of Topper Training after six months could be obtained. We conducted the research in a mental healthcare centre in Almere, a medium-sized city in the Netherlands. The target population in this mental healthcare centre consisted of children with mild to severe problems in social interaction, of which the majority had internalising problems and low self-esteem and were being victimised. The training was aimed at reducing victimisation and internalising and externalising problems, and increasing self-esteem. We expected that Topper Training would effectively reduce emotional problems, conduct problems, peer problems and victimisation, and would increase self-esteem. Moreover, we expected that Topper Training would help children to cope more adequately with the challenges or problems they faced. Therefore, we hypothesised that Topper Training would also reduce the impact that problems have on the lives of children.

## Method

### Design

We used a randomised controlled trial with two parallel conditions (intervention group and waiting list control group), three measurement points (pre, post and six-month follow-up) and three informants (child, teacher, parents). Individual children were randomly assigned to the intervention group or to the waiting list group in a 3:2 ratio using a simple randomisation procedure (a throw of the dice).



The 3:2 allocation ratio was chosen for practical reasons: in September 2010 and 2011 three groups could start and in February 2011 and 2012 only two groups could start with the training (which was the delayed intervention of the waiting list group). To recruit sufficient numbers of participants, children were recruited in two time periods. We started the intervention half yearly in September 2010, February 2011, September 2011 and February 2012 so that the waiting list group received the intervention six months after the intervention group.

After recruitment, each period started with a pre-intervention measurement (T1), followed by the randomisation procedure. The intervention group then started with the intervention, followed by a post-intervention measurement (T2) directly after the last training session. Half a year later the follow-up measurement (T3) took place. The waiting list group had to wait half a year after the first measurement and then completed the second measurement at the same time point as the intervention group. Thereafter, the waiting list group received the intervention, followed by the post-intervention measurement (T3) directly after the last training session (see Figure 6.1). All children underwent an interview that was planned after their pre-test preceding the intervention: after T1 for the intervention group and after T2 for the waiting list group. No changes to the trial design occurred after trial commencement.

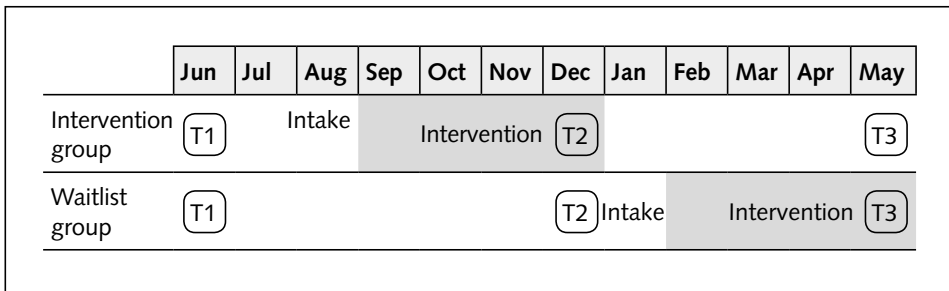


Figure 6.1 Measurement (T1, T2, T3) and intervention occasions starting in 2010 and 2011

### Participants

Children were recruited in primary schools and public health institutions in Almere, a mid-sized city in a central region of the Netherlands. Schools and institutions received posters and were informed about the possibility for children to participate in the Topper Training for free. The posters were directed at parents who were concerned about their child because of problems regarding social interaction. Examples of these problems were given, such as victimisation, low self-esteem, socially unskillful behaviour and aggressive behaviour.

Eligible participants were children who were in primary school, were aged between 8 and 11 years, experienced internalising and/or externalising problems in social interactions and were motivated to follow the training programme (as were their parents). These criteria were exactly the same as those used in the daily practice of the training. It was very rare that the training was not considered suitable: in two cases, a child allocated to the intervention group was no longer experiencing problems at the time of the intake interview and did not participate in the training. This was also the case for one child in the delayed intervention (waiting list) group half a year later. A total of 132 children participated in the study: 77 intervention and 55 control children.

Baseline demographic and clinical characteristics of the intervention and waiting list groups are shown in Table 6.1. According to the parents, about 10% of the children were diagnosed as having ADHD or ADD, one child had an anxiety disorder and one child had a disorder in the autistic spectrum. The children with ADHD or ADD were prescribed medication for their condition. The intervention and control groups did not differ in age ( $t(130) = 1.540, p = .126$ ) or gender ( $Chi^2(1) = .779, p = .377$ ). Mean age was 9.51 years ( $SD = 1.2$ ) for the intervention group and 9.2 years ( $SD = 1.1$ ) for the control group. The percentage of boys was 53% in the intervention group and 45% in the control group. Socioeconomic status did not differ between the groups: the distribution of families in low, middle and high educational segments was 6.5%, 41.5% and 52% respectively in the intervention group and 9%, 42% and 49% respectively in the waiting list group ( $Chi^2(2) = .338, p = .845$ ). Also, ethnic composition did not differ between the groups ( $Chi^2(2) = 3.349, p = .187$ ). In the intervention group 80% was Dutch, 3% Western migrant and 17% non-Western migrant. The ethnic composition of the control group in this respect was 73%, 9% and 18% respectively.

	<b>Intervention</b>	<b>Waiting list</b>
	( <i>n</i> = 77)	( <i>n</i> = 55)
Age (years)	9.51 (1.2)	9.2 (1.1)
Sex (male)	41 (53%)	25 (45%)
Socioeconomic status (SES)		
Low	5 (6.5%)	5 (9%)
Middle	32 (41.5%)	23 (42%)
High	40 (52%)	27 (49%)
Ethnicity		
Dutch	62 (80%)	40 (73%)
Western migrant	2 (3%)	5 (9%)
Non-Western migrant	18 (23%)	15 (27%)
Diagnosis		
ADD/ADHD	8 (10.4%)	5 (9%)
Anxiety disorder	1 (1.3%)	0
Autism spectrum disorder	0	1 (1.8%)
Attachment problems	1 (1.3%)	0
<i>Note.</i> Data are means ( <i>SD</i> ) or numbers (%).		

Table 6.1 Baseline demographic and clinical characteristics of intervention and waiting list group

## Procedure

Families who signed up for the training were asked to participate in the study. Directly after applying for the training, parents were sent questionnaires for the parents, the teacher and the child to fill in and send back (see measures). Upon return of the questionnaires, the randomisation procedure took place. Families of the intervention group were invited for an interview, which served to examine whether the expectations of the parents matched the training programme and whether the psychologist expected the training to be suitable for the child. Just before the interview, the children filled in additional questionnaires under the supervision of a test assistant.

The training consisted of ten training sessions given every two weeks to 15 participants. Directly after the last training session, children (under supervision) and parents filled in the questionnaires again at the mental healthcare centre.

Parents took home a questionnaire for the teacher and for the other parent (where required) and sent them back within a month. Completion of the questionnaire took about 15-20 minutes. Six months after the training, a meeting was organised for each training group to fill in all the questionnaires again. Questionnaires for absent parents and teachers were taken home and sent back within a month. To motivate parents to fill in the questionnaires at three separate points in time, the training was offered for free (upon the precondition that all measurement occasions were completed) and parents received a report with the results for their child.

The children assigned to the waiting list group were visited at school and asked to complete questionnaires under the supervision of a test assistant. They had to wait half a year after randomisation and then received the questionnaires again at home (T2) and were invited for an interview. Just before the interview, the children filled in the questionnaires under the supervision of a test assistant. Subsequently, they started with their intervention and filled in the last questionnaires after the last training session under supervision.

### Intervention

Topper Training was provided by two trained psychologists with 5 and 7 years experience each in giving this training. The intervention consisted of ten 90-minute group sessions given every two weeks. Training groups contained a maximum of 15 children with internalising and/or externalising problems. In the first half hour, children and parents were trained together, after which they were trained in separate groups. After each meeting, parents were given background information and homework assignments to do at home. The sessions followed a detailed protocol. Each session started with a rehearsal of exercises from the previous sessions. Thereafter, the trainer introduced the theme of the session through a story. Children practiced social skills and made use of the four coloured caps (see introduction) in role-plays. They also discussed social themes and dilemmas. Every session ended with a physical trust-building exercise.

The first three sessions were directed at basic social skills: presenting oneself, eye contact, giving and receiving compliments, and expressing and interpreting emotions. In the fourth session, children practiced reacting to bullying and troublesome situations. Special attention was paid to bystander behaviour: children practiced ignoring or walking away from negative behaviour. The themes of the fifth, sixth and seventh sessions were showing interest in one another, trust, and friendship, respectively. In the seventh and eighth sessions, the children gave each other feedback: children received suggestions from their peers for behavioural

change. The ninth session reminded children of the people who love them and stressed their worth to those people. "You don't have to be loved by everyone to be worthwhile. Some people don't like you and that's fine." The last session was the diploma ceremony. Parents were made aware of their role as a model for their child and practiced the same skills as the children. Moreover, a 'Topper' way of thinking and acting as a parent was taught wherein children's positive intentions are affirmed and children's sense of responsibility is stimulated by reducing psychological control over the child.

### Measures

All measures were primary outcome measures: emotional, conduct and peer problems; prosocial behaviour; impact of the problems; self-esteem; self-perceived victimisation; and bullying. We used the following questionnaires to measure these outcomes. No changes to trial outcomes occurred after the trial commenced.

#### **Basic demographics and clinical characteristics**

General background information regarding parents and children was assessed using a basic demographics form at pre-test. Clinical characteristics were also assessed on this form through two questions: "Does your child have learning problems or other problems?" and "Does your child receive professional help for problems related to development, and if so for which problems?" As a result, only problems that were already diagnosed or known to the parents were reported. Socioeconomic status was measured on the basis of the highest education level achieved by both parents. Parents filled in a 9-point ordinal scale ranging from no education to university degree. We categorised these scores on a three-point scale: low, middle and high education level. Low education level corresponds to a maximum of primary school; middle education level to a maximum of secondary school at the second highest level (HAVO in The Netherlands); and high education from secondary school at the highest level (VWO in The Netherlands) to university degree.

#### **Strengths and Difficulties Questionnaire (SDQ)**

Parents and teachers reported children's problem behaviour on the SDQ (Goodman, 2001; Van Widenfelt, Goedhart, Treffers, & Goodman, 2003), a 25-item measure of problem behaviour and prosocial behaviour. We used the Emotional Symptoms scale (5 items), Conduct Problems scale (5 items), Peer Problems scale (5 items) and Prosocial behaviour scale (5 items). Items were rated on a scale ranging from 0 (*not true*) to 2 (*certainly true*). Internal consistency on these scales ranged between .57

and .68 for parent reports and between .76 and .81 for teacher reports in a Dutch sample of 8- to 12-year-olds (Van Widenfelt, Goedhart, Treffers, & Goodman, 2003). In our sample, Cronbach's alpha ranged between .50 and .71 for parent reports and between .70 and .81 for teacher reports.

We used the extended SDQ with an additional impact supplement. This extended version of the SDQ asks whether the respondent thinks the young person has a problem, and when that is the case it enquires further about chronicity, distress and social impairment. We used the Impact score, which is the sum of the scores on the distress and social incapacity items. The Impact score is found to discriminate better between community and clinic samples than symptom scores (Goodman, 1999).

Pre-test scores of mother and father were strongly correlated ( $r$  between .51 and .79). We decided to take the average parent score by computing the mean score of father and mother. When the score of only one parent was available at a given point in time, we also used the score of that parent at the other time points for that child to ensure correct within-subject comparisons.

### **Child Depression Inventory (CDI)**

We assessed depressive symptoms through a Dutch translation (Van Leuven & Van Beek, 2000) of the Children's Depression Inventory (CDI; Kovacs, 1992). In this translation, one item from the original CDI concerning suicidal ideation ("I want to kill myself") was replaced by two less precarious questions: I (never/sometimes/often) think "I wish I was dead" and I (always/sometimes not/do not) think that life is worth living. This resulted in a 28-item questionnaire. For each item, children selected one of three statements indicating how they had felt over the past 2 weeks. The CDI has strong predictive, convergent and construct validity (e.g., Kovacs, 2001; Mattison, Handford, Kales, Goodman, & McLaughlin, 1990). Internal consistency of this Dutch version was good in a nonclinical sample of 8- to 17-year-olds (Cronbach's alpha = .81; Van Beek, Hessen, Hutteman, Verhulp, van Leuven, 2012). The 1-month test-retest reliability in a subsample was .67, which is comparable to the original American version (Kovacs, 1992) for time intervals between 3 and 6 weeks (between  $r = .50$  and  $r = .83$ ). Cronbach's alpha in the current sample was .85. On the basis of cut-off scores suggested by Kovacs (1992), scores below 13 were rated as normal and scores of 16 or higher were rated as clinically depressed.

### Self-Perception Profile for Children (SPPC)

We used the self-esteem scale from the Dutch version (Veerman, Straathof, Treffers, van den Bergh, & ten Brink, 2004) of the Self-Perception Profile for Children (Harter, 1985). This scale consists of 6 items. Each item consists of two opposing descriptions, from which children have to choose one and then indicate whether this is *somewhat true* or *totally true* for them. Accordingly, each item is scored on a four-point scale, with a higher score reflecting a more positive view of oneself. The Dutch version was found to be reliable (Cronbach's alpha = .74 and test-retest reliability after four weeks was .74; Veerman et al., 1997) and valid (Muris, Meesters, & Fijen, 2002). Internal consistency in the current sample was .88. Scores below the 10<sup>th</sup> percentile were rated as clinical and above the 20<sup>th</sup> percentile as normal. This translates into different scores for boys and girls: girls scored clinical below 16, boys below 17. Scores of 18 or higher were rated as normal for boys and girls.

### Topper questionnaire

We used the Topper questionnaire (Vliek, Riet, Weide, Overbeek, & Orobio de Castro, in review) to measure bullying and self-perceived victimisation. Bullying was measured by the question: 'I bully at school' and self-perceived victimisation was measured by two questions: 'I am afraid of being bullied' and 'I get bullied'. For each statement children chose "totally not true," "not really true," "a little true" or "totally true" using a four-point Likert scale. This questionnaire was filled in at home since supervision was not necessary. All other child questionnaires were completed under the supervision of a test assistant. Clinical relevance was measured by categorising children as 'bully' or 'non-bully' and 'victim' or 'non-victim'. Children with a score below 3 ("totally not true" and "not really true") were rated as non-victim or non-bully; children with a score of 3 or higher ("a little true" or "totally true") were rated as victim or bully. This classification is comparable to the criterion (i.e. more than once or twice) used by Farrington and Ttofi (2010) in their meta-analysis.

### Data Analyses

To test the immediate effects of Topper Training, we used Repeated Measures ANOVA with group (intervention, waiting list) as between group factor and time (T1, T2) as within group factor. A significant group x time interaction effect indicated an intervention effect. Effect sizes (Cohen's *d*) were corrected for small pre-test differences (reported  $d = d \text{ at post-test} - d \text{ at pre-test}$ , cf. Wilson & Lipsey, 2007). To determine the clinical relevance of these results, we computed the proportion of children in each group that moved from the clinical to the normal range, based on the normative data of the instruments.

We used the three time points for the waiting list group to test for additional evidence of an intervention effect. The slope between T2 and T3 (the intervention period) was compared with the slope between T1 and T2 (waiting list period). The significance of the difference was tested with a quadratic interaction effect in a repeated measures analysis, while only including the waiting list group. A significant interaction in combination with inspection of the graphs for the direction of the interaction was used as an additional test for the intervention effect. To examine the extent to which immediate post-test change was maintained at the six-month follow-up, Paired-Samples t-tests were used on immediate post-test and follow-up scores in the intervention group.

## Results

### Participants

A total of 140 families were eligible for inclusion in the study (see Figure 6.2). Of those, 134 families (96.3%) expressed their desire to participate in the study and gave their permission. The 134 children from these families were randomly assigned to the intervention group ( $n = 79$ ) and waiting list group ( $n = 55$ ). Two children from the intervention group did not report any problems at the interview stage and therefore chose not to participate in the intervention. At post-intervention (T2), all of the remaining children (77 intervention and 55 waiting list children) were still participating in the study.

The waiting list group received the intervention half a year later than the intervention group. By that time, one child had decided not to participate in the intervention because the previously reported problems were no longer apparent. Five other (waiting list) children dropped out during the intervention: one child dropped out because the parents were in the process of a divorce, two children dropped out because of family problems and two children dropped out of the intervention for other, unknown reasons. All of these six children were included in the second time point before their intervention and dropped out thereafter. At the third measurement point, we were unable to contact two other children in the intervention group and one in the waiting list group.



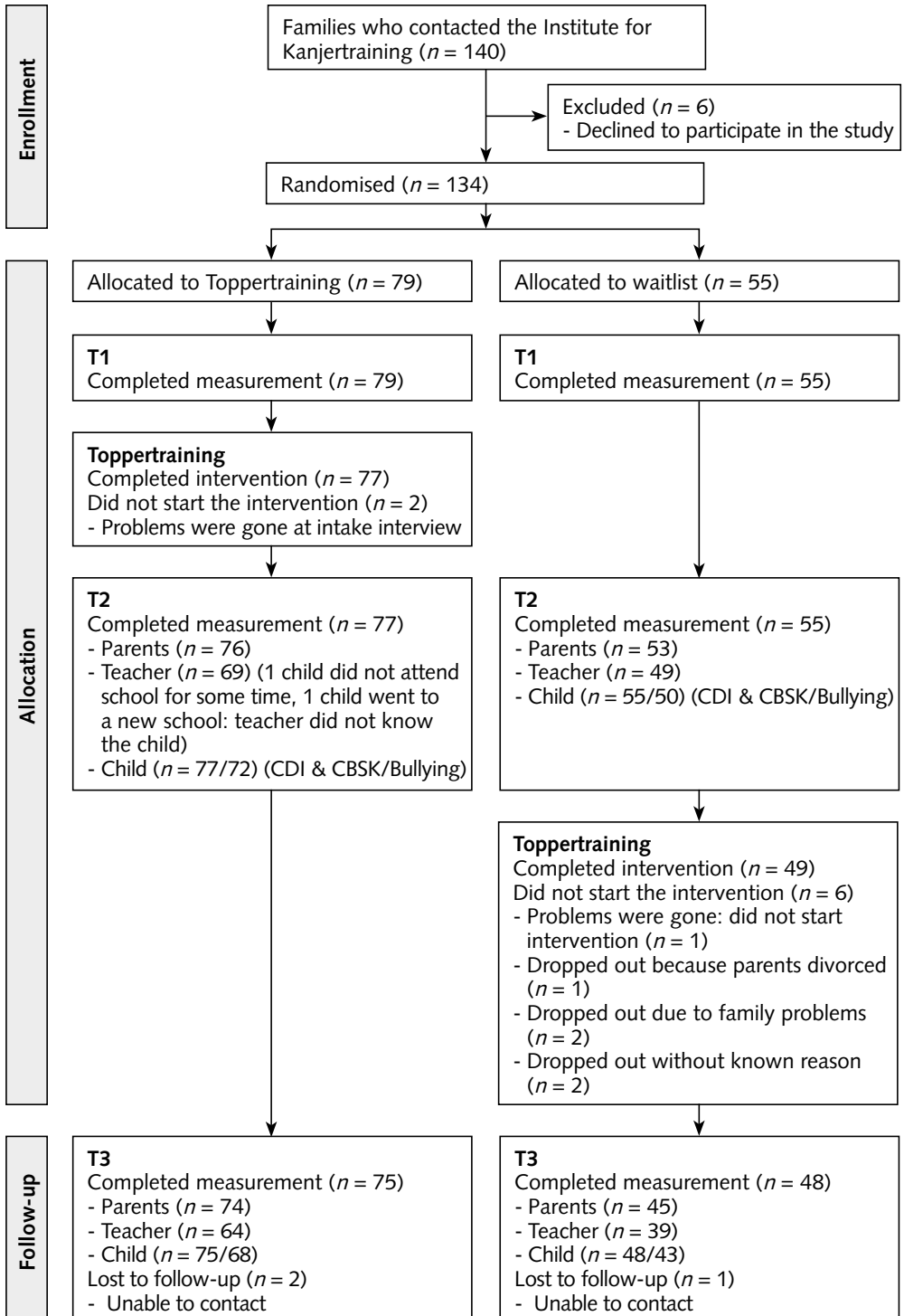


Figure 6.2 Participant Flow

## Attendance

Attendance was high for both groups. The mean attendance for the intervention group over 10 group sessions was 9.4 sessions ( $SD = .7$ ), with 55% of the children attending all 10 sessions, 35% attending 9 sessions and 10% attending 8 or 7 sessions. Mean attendance during the intervention period of the waiting list group was 9.5 sessions ( $SD = .8$ ), with 64% of the children attending all 10 sessions, 24% attending 9 sessions and 12% attending 8 or 7 sessions. Five intervention children filled in the post-intervention measurement after 9 training sessions instead of 10. This was done because these children would not be able to fill in the questionnaires directly after the last training session. To ensure a post-test measure for these children, we chose to let them fill it in directly after the ninth session.

## Baseline Differences between Intervention and Waiting List Groups

At baseline, the groups only differed on self-perceived victimisation ( $t(121) = 1.984$ ,  $p = .05$ ). The intervention group scored higher at baseline ( $M = 2.3$ ,  $SD = 1.0$ ) than the waiting list group ( $M = 2.0$ ,  $SD = .9$ ). We corrected for these pre-test differences by entering the pre-intervention score as a covariate in an ANCOVA on the intervention effect. Mean scores did not differ between the intervention and control group for any other variable, including bullying, depression, self-esteem or the parent and teacher SDQ scales (all  $p > .05$ ).

## Immediate Effects

Table 6.2 provides descriptive statistics for the intervention and waiting list groups at pre-intervention (T1), post-intervention (T2) and half a year later (T3). We plotted these mean scores in Figures 6.3 to 6.11, calling the intervention group 'Immediate Topper' and the waiting list group 'Waiting list Topper'. The word "Training" in the figures refers to the training period of this group. Table 6.3 provides the results from repeated measures analyses. Topper Training reduced self-perceived victimisation ( $d = .64$ ) and improved self-esteem ( $d = .46$ ). Topper Training reduced parent-reported (but not teacher-reported) emotional symptoms ( $d = .60$ ), peer relationship problems ( $d = .28$ ), and the impact of these problems ( $d = .56$ ) and teacher-reported (but not parent-reported) conduct problems ( $d = .35$ ). No significant effects were found on self-reported bullying ( $d = .15$ ), depression ( $d = .16$ ) or prosocial behaviour. No adverse effects were found: in all cases where no effects were found, the intervention group improved as much as the waiting list group did.

### Clinical Relevance

Clinical relevance of the results (i.e. the extent to which children scoring in the clinical range at pre-test showed movement to the normal range at post-test) is shown in Table 6.4. For most of the problem domains, the proportion of children scoring in the clinical range at baseline that moved to the normal distribution at post-test in the intervention group was substantial (30% to 70% across different measurements). Parent- and child-reported proportions of improvement were significantly higher in the intervention group than in the waiting list group for emotional and conduct problems, impact and self-esteem. Teacher-reported proportions were more similar in the intervention and waiting list groups, resulting in no statistical differences.

		Intervention (Topper Training between T1-T2)			Waiting list (Topper Training between T2 - T3)		
		T1	T2	T3	T1	T2	T3
Emotional symptoms	Parent	4.94 (2.1)	3.37 (2.0)	3.07 (2.2)	4.32 (2.2)	4.00 (2.0)	3.14 (1.8)
	Teach	3.52 (2.5)	2.72 (2.3)	2.33 (1.9)	3.35 (2.2)	2.76 (2.2)	2.41 (1.8)
Conduct Problems	Parent	2.54 (1.9)	1.93 (1.6)	1.83 (1.7)	2.13 (1.7)	1.83 (1.8)	1.53 (1.5)
	Teach	1.55 (2.0)	1.22 (1.5)	.97 (1.4)	1.00 (1.5)	1.30 (1.9)	1.00 (1.4)
Peer relationship problems	Parent	3.44 (2.4)	2.72 (2.2)	2.63 (2.1)	2.72 (2.0)	2.64 (1.8)	2.33 (1.5)
	Teach	3.41 (2.9)	3.13 (2.9)	2.72 (2.6)	2.59 (2.3)	2.22 (2.1)	1.69 (1.7)
Prosocial behaviour	Parent	7.62 (1.9)	8.03 (1.8)	7.83 (2.1)	7.62 (1.73)	7.98 (1.5)	8.71 (1.4)
	Teach	6.87 (2.8)	7.38 (2.5)	7.25 (2.5)	7.16 (2.2)	7.45 (1.9)	7.87 (1.8)
Impact	Parent	2.98 (2.0)	1.44 (1.9)	1.35 (1.8)	2.40 (1.6)	1.95 (1.5)	.81 (.96)
	Teach	2.1 (1.9)	1.28 (1.5)	1.16 (1.4)	1.63 (1.6)	1.06 (1.2)	.87 (1.1)
Self-perceived victimisation	Child	2.34 (1.0)	1.68 (.8)	1.57 (.7)	1.96 (.9)	1.91 (1.0)	1.48 (.7)
Self-reported bullying	Child	1.29 (.6)	1.31 (.7)	1.16 (.5)	1.32 (.8)	1.24 (.7)	1.09 (.3)
Self-worth	Child	18.55 (4.6)	20.62 (3.6)	20.95 (4.1)	19.11 (5.7)	19.31 (4.2)	20.46 (3.6)
Depression	Child	10.40 (7.1)	7.96 (5.9)	5.95 (5.3)	10.02 (7.2)	8.60 (6.7)	7.98 (6.2)
<i>Note.</i> Parent = parent report, Teach = teacher report, Child = child report							

Table 6.2 Means and Standard Deviations (between brackets) for the Intervention and Waiting list Group at T1, T2, and T3.

Results Intervention Effect	Child report			Parent report			Teacher report		
	<i>F</i>	<i>d</i>	<i>n</i>	<i>F</i>	<i>d</i>	<i>n</i>	<i>F</i>	<i>d</i>	<i>n</i>
SDQ									
Emotional Symptoms				15.12	.60**	76, 53	.17	.09	69, 49
Conduct Problems				1.47	.17	76, 53	4.95	.35*	69, 49
Peer Problems				5.14	.28*	76, 53	.04	.04	69, 49
Prosocial Behaviour				.04	.03	76, 53	.26	.08	69, 49
Impact of Problems				8.59	.56**	76, 53	.68	.10	69, 49
Topper questionnaire									
Self-perceived victimisation	6.66	.64*	72, 50						
Self-reported bullying	4.18	.15	72, 50						
Self-worth (SPPC)	6.51	.46*	77, 55						
Depression (CDI)	.97	.16	77, 55						
<p><i>Note.</i> <i>d</i> = Cohen's effect size, <i>n</i> = number of children analysed in intervention and waiting list groups. We corrected for pre-test differences in self-perceived victimisation by entering pre-test as a covariate in an ANCOVA on the post-intervention scores. * <math>p &lt; .05</math>; ** <math>p &lt; .01</math>.</p>									

Table 6.3 Intervention Effects: Time by condition interactions in Repeated Measures ANOVA's

	Moved from clinical to normal range SDQ parent report, below child report				Moved from clinical to normal range Teacher report			
	Intervention		Waiting list		Intervention		Waiting list	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
SDQ								
Emotional Symptoms	15 of 32	47*	3 of 19	16	7 of 10	70	3 of 5	60
Conduct Problems	9 of 14	64*	1 of 8	13	5 of 10	50	0 of 1	0
Peer Problems	9 of 27	33	2 of 9	22	7 of 18	39	4 of 7	57
Prosocial Behaviour	3 of 10	30	3 of 7	43	6 of 20	30	8 of 13	62
Impact of Problems	20 of 43	47*	3 of 24	13	9 of 26	35	9 of 16	56
Topper questionnaire								
Self-perceived victimisation	25 of 40	63	5 of 17	29				
Self-reported bullying	4 of 6	67	4 of 5	80				
Self-worth (SPPC)	11 of 16	69*	2 of 12	17				
Depression (CDI)	10 of 18	56	4 of 8	50				
<p><i>Note.</i> <i>n</i> = number of clinical children that moved to normal range from pre-test to post-test, *<i>p</i> &lt; .05 (of <i>Z</i>-statistic for difference of proportion of moved children between intervention and waiting list group).</p>								

Table 6.4 Clinical Relevance of Results: Percentage of Children who Moved from Clinical to Normal Range

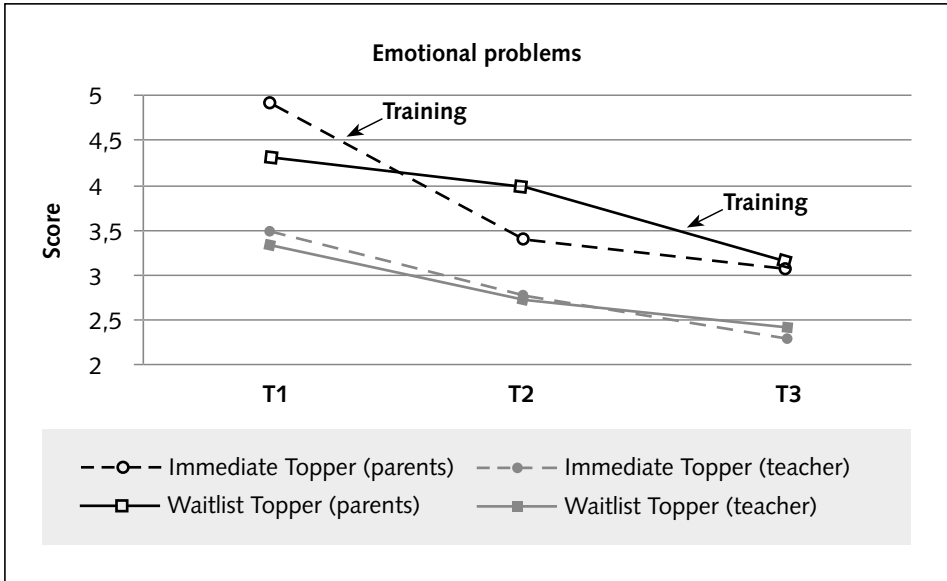


Figure 6.3 Significant effect of Topper Training on parent-reported (but not teacher-reported) emotional symptoms: decrease during Topper Training period (between T1 and T2 for Immediate training group and between T2 and T3 for delayed training group)

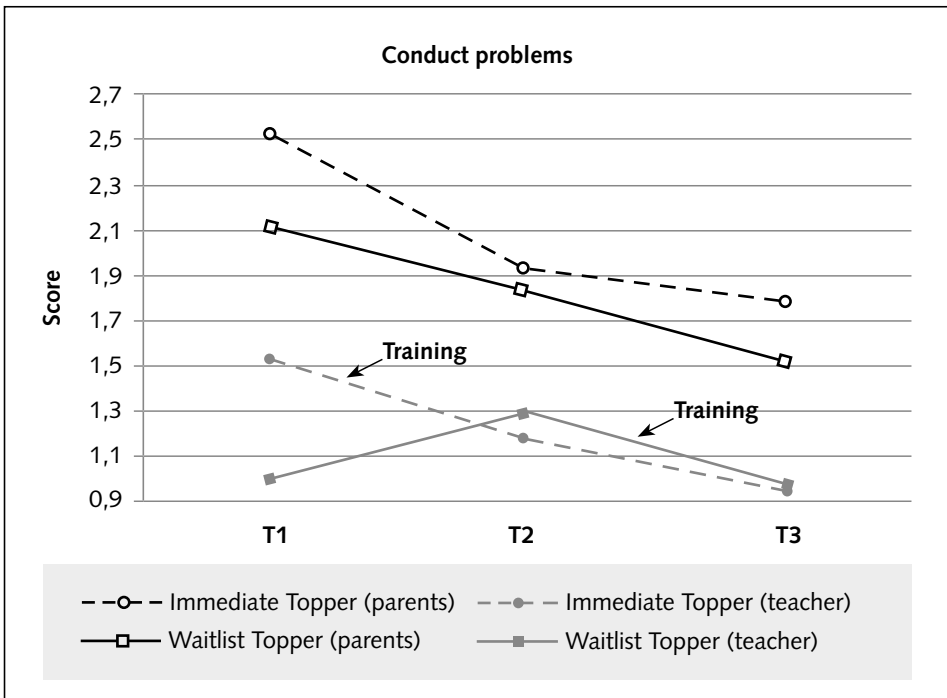


Figure 6.4 Significant effect of Topper Training on teacher-reported (but not parent-reported) conduct problems

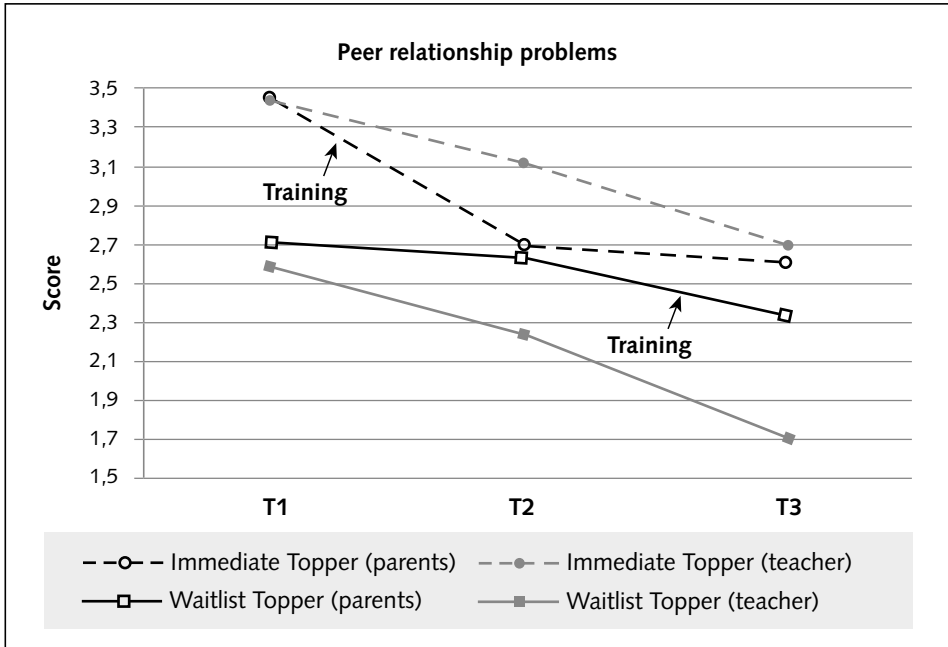


Figure 6.5 Significant effect of Topper Training on parent-reported (but not teacher-reported) peer relationship problems

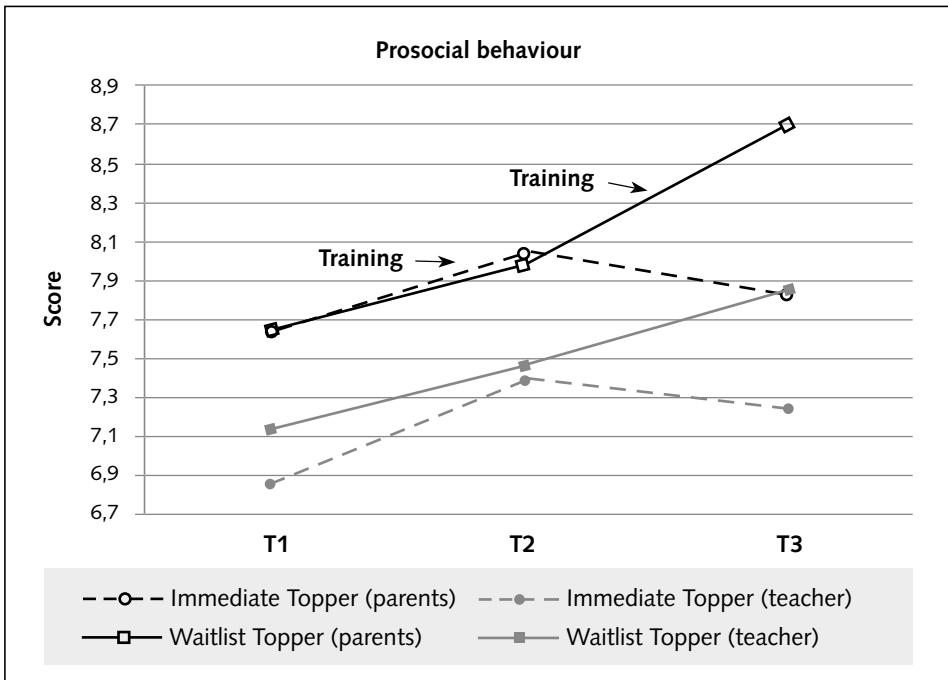


Figure 6.6 No significant effect of Toppertraining on prosocial behaviour



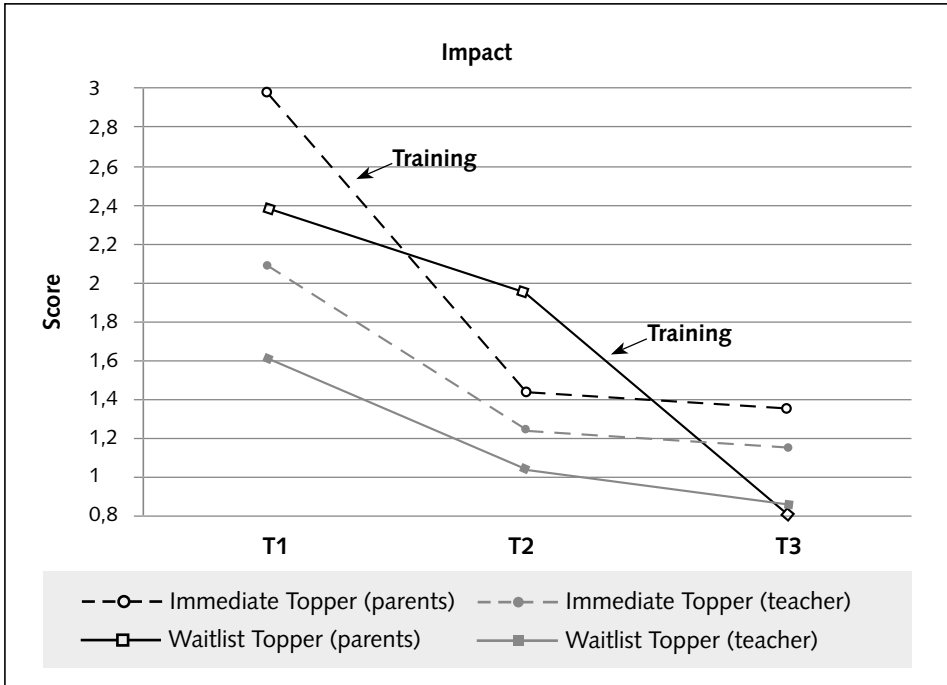


Figure 6.7 Significant effect of Topper Training on parent-reported (but not teacher-reported) impact of the problems

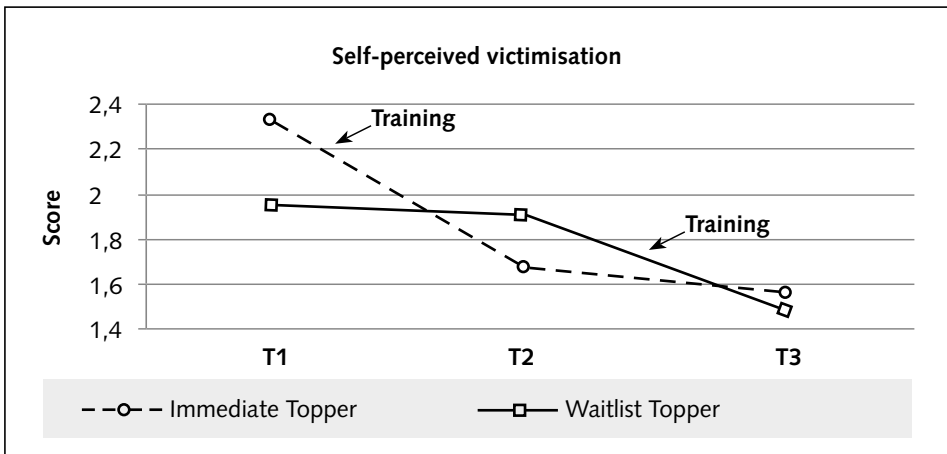


Figure 6.8 Significant effect of Topper Training on self-perceived victimisation

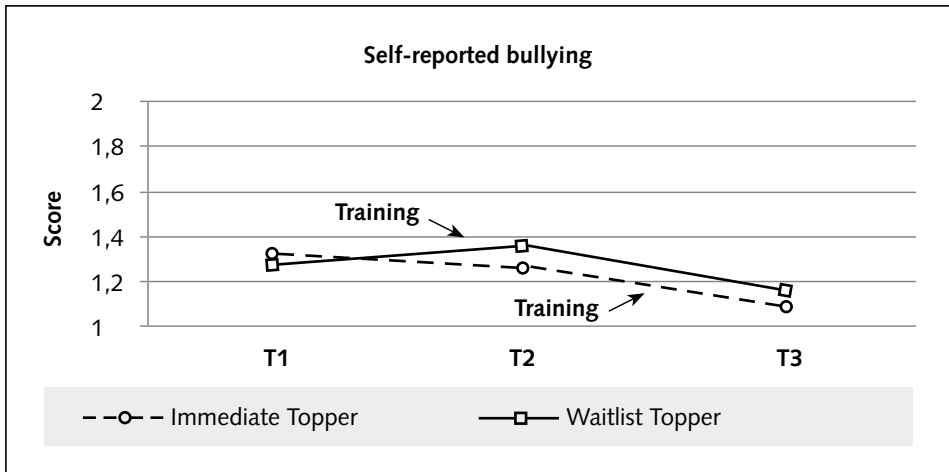


Figure 6.9 No significant effect on self-reported bullying

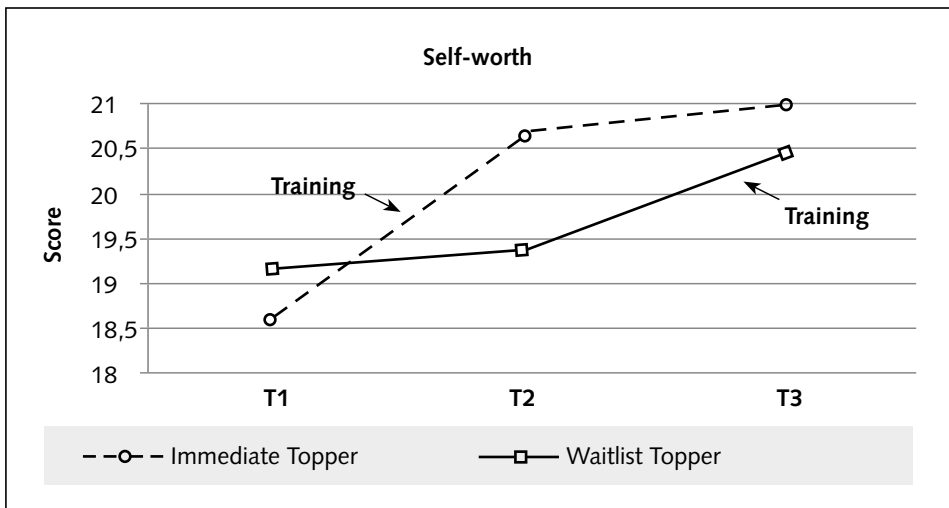


Figure 6.10 Significant effect of Toppertraining on self-worth

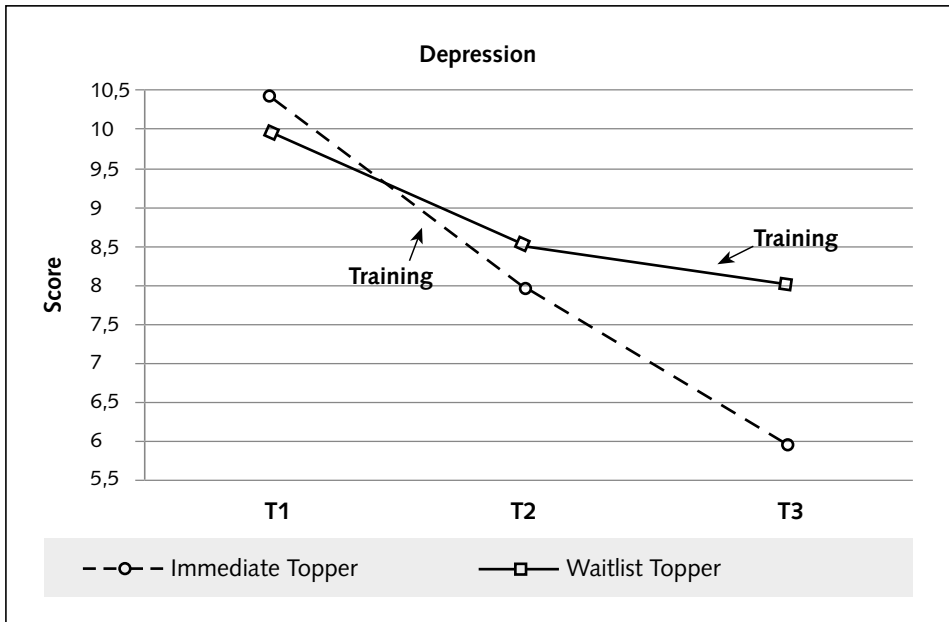


Figure 6.11 Significant effect of Toppertraining on depression 6 months after the intervention: between T2 and T3 for the Immediate Topper group

### Additional within-group Analyses of Effects in the Delayed Intervention Group

Additional analyses were conducted to test for the effects of Topper Training in the waiting list (i.e. delayed intervention) group. In these analyses changes in the outcome variables during the waitlist period were compared with changes in the same group during the intervention period using repeated measures ANOVA's with the three time points and a quadratic contrast. Significant quadratic effects (indicating more improvement during the intervention period than during the waiting list period) were found for Self-perceived victimisation:  $F(1.42) = 4.23$ ,  $p < .05$ , parent-reported Emotional symptoms:  $F(1.44) = 5.73$ ,  $p < .05$ , and Impact of the problems:  $F(1.44) = 6.85$ ,  $p < .05$ . No quadratic (intervention) effects were found for teachers: improvements experienced during the waiting list period were comparable with improvements during intervention, resulting only in significant linear effects.

## Maintenance of Effects

Due to the delayed intervention design, no half-year follow-up data were available for the control group. We therefore tested whether outcomes were stable or improved from immediate post-intervention to the six-month follow-up for the intervention group separately. Within-participants t-tests indicated that scores did not change between immediate post-test and six-month follow-up for all scales on which immediate effects were found (see also Figures 6.3 to 6.11). While no immediate effect was found for depression (the waiting list group improved as much as the intervention group) the scores at follow-up were significantly lower than the scores at post-intervention, which may tentatively suggest that Topper Training reduces depression in the long run.

## Discussion

We evaluated the effects of the indicated preventive intervention Topper Training in a randomised controlled trial. Topper Training embodies two elements that have potentially positive effects on children suffering mild to severe psychosocial problems: devoting more attention to children's latent intention to behave prosocially and making children aware of their own responsibility for their behavioural choices. In addition to these elements, the intervention also includes more well-known effective elements, such as practicing social skills, behavioural cognitive techniques and parental involvement. The intervention was given in a mental healthcare setting in the usual way (ten sessions by two trained psychologists) to children and their parents. Results indicate that Topper Training is effective in reducing emotional problems, peer relationship problems, conduct problems, and self-perceived victimisation, and improves children's self-esteem. Furthermore, the results indicated that Topper Training reduces the impact of problems on the lives of children. All effects were still present - or strengthened (in the case of depression) - after half a year. No significant effects were found for self-reported bullying and prosocial behaviour, however. The results provide support for the effectiveness of Topper Training in 8- to 11-year-old children with mild to severe psychosocial problems, under real-world conditions. The results are in line with previous research on Topper Training in a mental healthcare setting and in a classroom setting (Vliek, Overbeek, & Orobio de Castro, 2014; in review).

Overall, these findings indicate that cognitive behavioural techniques taught in a peer group with an additional parent training and a focus on prosocial intentions and children's sense of responsibility is effective for children aged 8 to 11 years

with psychosocial problems. Moreover, this study shows that the effects of Topper Training are clinically relevant. The proportion of children that moved from the clinical to the normal range was statistically higher in the intervention group than in the waiting list group for emotional problems, conduct problems, impact and self-esteem. These effects were measured after 10 sessions, taking about five months in total. The intervention does not demand costly diagnostic tests, but is low threshold and can be followed without referral. This makes the intervention feasible. Since children with either emotional, conduct or peer problems all profit from the intervention, Topper Training may be widely applicable.

The discrepancies between parent- and teacher-reported effects are salient in this study. A surprising finding was that parents in the current study did not report significant improvements in their child's conduct problems, while this was reported by the teachers, and while parent-reported conduct problems of the child *were* found to decrease in our earlier studies conducted in a mental healthcare setting (Vliek, Overbeek, & Orobio de Castro, 2014) and in a classroom context (Vliek, Overbeek, & Orobio de Castro, in review). The parent-reported changes in conduct problems from pre- to post-test in the current study were clinically relevant: about two-thirds of the children with clinical-level conduct problems at pre-test moved to the normal range at post-test. The fact that the improvement in conduct problems was clinically relevant but not statistically significant may be a consequence of the heterogeneity of the sample. Only about 15-18% of the children showed clinical conduct problems at pre-test, according to parents. Topper Training was clearly effective for those children, but they constituted a relatively small subgroup in the total sample. Mean scores in the whole sample show a floor effect. Teachers may be more sensitive to perceiving (changes in) conduct problems in a classroom context - where a relatively strong emphasis is placed on adequate social behaviour and following rules - than parents.

In contrast to parents, teachers did not seem to experience any effect on the part of Topper Training on emotional symptoms, peer relationship problems and impact. Inspection of the data reveals that teachers experienced improvements in emotional and peer problems in control group children while they were waiting for the intervention. This might indicate that teachers may have been especially attentive to the children who were placed on a waiting list. This extra attention might have had a positive influence on the children, in that they may have felt more noticed and understood by the teacher, which in itself can lead to a reduction in emotional symptoms. Another explanation for the discrepancy between parent- and teacher-reports could be that teachers may be more sensitive to perceiving (changes in) conduct problems in a classroom context than to changes in emotional problems that are not readily observable. Yet another explanation might be that the new child skills that have an effect on emotional symptoms and peer interaction are only practiced in the home

context and have not yet been generalised into the school setting.

At first sight, another surprising finding was that while victimisation was effectively reduced by Topper Training, levels of self-reported bullying were not affected by the program. Perhaps this pattern of findings can be explained by the fact that there was very little self-reported bullying among the children in the current sample at baseline, so improvements could hardly be made. Future studies, with other criteria for inclusion, may test whether Topper Training reduces bullying by children who are selected for bullying behaviour. In addition, contrary to expectations, we did not find any significant effects on prosocial behaviour. Topper Training seems to have more effect on reducing problems than it does on stimulating positive behaviour. Another explanation may be that children in this sample scored in the normal range at pretest on prosocial behaviour, on average (which in the SDQ means: being helpful and kind, sharing), which may have resulted in a ceiling effect.

The present study provides a stringent test of the effectiveness of Topper Training, but it is still characterised by some limitations. One limitation of this study is that the follow-up data for children who received the intervention directly, could not be compared to a control group that did not undergo an intervention. Nevertheless, the data do indicate that children did not regress: the positive effects were all maintained. Since no control group was available at the time of follow-up (the waiting-list group was trained too), this does not exactly prove a follow-up effect, but the data do indicate that the beneficial effects within the experimental group did not abate over time. A second limitation is that only a subset of our sample scored in the clinical range at pre-test: this made the sample size for calculating clinical relevance relatively small. While the clinical relevance of the current results is certainly promising, we would expect more pronounced effects with a larger sample size. A third limitation of this study is that although we were generally able to use reliable and valid measures, bullying and victimisation were measured by only one and two questions, respectively. However, the Olweus Bully/Victim questionnaire (Olweus, 1996) is used in many studies, and it too relies on two main questions (comparable to the ones we used in our study). Finally, to make our results more comparable to those obtained when using Olweus' complete questionnaire, it would have been better if we had used similar response options to those used in previous studies, such as 'not at all', 'only once or twice', 'two or three times a month', 'about once a week', and 'several times a week'. We did not do this because the questionnaire being used was part of the normal intervention intake procedure, with standard answering categories for all questions.

An important strength of this study is the random assignment of the children to either the intervention or waiting list group, which makes causal inference strong. In addition, the training was given under real-world conditions with routine provision

of a training that is already widely implemented in this way. This makes the results significant in practical terms: this intervention in other mental healthcare centres by trained psychologists is likely to be effective. Results of an earlier study in these centres were found to be in line with the present findings (Vliek, Overbeek, & Orobio de Castro, 2014). Another strength of the study is the heterogeneity of the sample. This intervention is not only directed at and effective for children with either internalising or externalising problems, but also at the whole spectrum of psychosocial problems. This corresponds to the finding that it is seldom that a person has only one problem or diagnosis: comorbidity is very common. Caspi et al. (2014) even found that psychiatric disorders could best be explained using one General Psychopathology factor: the p factor. They argued that this p factor makes it difficult to find treatments to individual mental disorders: transdiagnostic approaches may be a better idea. Our results indicate that Topper Training is a good example of such a transdiagnostic intervention.

### **Conclusion and Future Research**

This study found that Topper Training, an intervention that awakens latent positive intentions and makes children aware that they have the ability to choose how to behave, can change the behaviour of children from emotionally or behaviourally problematic to 'normal' and can increase children's self-esteem directly after the training, with no diminishing of the effects over a six-month period. Since Topper Training is widely implemented in the Netherlands and this study was done under real-world conditions, these results are promising in terms of the daily practice of this intervention for children with psychosocial problems.

As an additional step towards examining the effective elements of interventions for children with psychosocial problems, future research might examine whether improvements in children's prosocial intentions and feelings of responsibility actually mediate the intervention effect. Moreover, a larger sample would enable us to examine the effectiveness in subsamples based on severity of problems, age and gender, which would yield more information on the question for whom the intervention is more (or less) effective. Overall, in line with the idea that children have positive intentions, as Nelson Mandela stated and Frans de Waal found in his primates, this study demonstrates that appealing to latent positive intentions and emphasising children's individual responsibility for making behavioural choices in line with these intentions might be an effective way of teaching children to deal with challenging social situations and events and the related stress potential.





## Chapter 7

# General Discussion



The purpose of this thesis was threefold. First, we wanted to provide a theoretical framework for the development of positive social interactions and the basis of Topper Training. To this end, Chapter 2 provided a literature review on risk and protective factors for social behaviour and a theoretical framework for Topper Training. Secondly, we wanted to develop and validate a measure of social functioning in the primary school classroom - the Topper questionnaire. Up to now, a measure of negative intentions had been lacking and a combination of subscales - Negative intentions, Unhappy & Gloomy, Restless & Disruptive behaviour and Prosocial - was not available for this age group. To this end, Chapter 3 described the development, reliability and validity of the Topper questionnaire. Thirdly, we wanted to examine the effectiveness of Topper Training - a comprehensive programme in the Netherlands whose aim is to prevent and cure emotional and behavioural problems and to create or maintain a positive classroom climate. Thus far, despite the broad dissemination of the programme, the effectiveness of Topper Training had not yet been studied. To this end, Chapter 4 described the effectiveness of Topper Training given by a psychologist in a primary school setting directed at classes in urgent need of help as a result of social problems. Chapter 5 described an empirical study on the effectiveness of Topper Training in mental healthcare centres. Chapter 6 replicated this study using a randomised controlled design instead of the quasi-experimental design that was used in chapter 5. In this present final chapter, the most prominent findings will be summarised, discussed and integrated into an overarching perspective. Subsequently, we will provide implications and suggestions for future research and practice.

## Summary of Main Findings

### **Theoretical framework**

In Chapter 2 we described which factors preventive interventions should focus on in order to be able to effectively stimulate positive social interaction in primary school children. Interventions directed at general risk and protective factors for multiple social problems were found to be more effective than those directed at specific problem behaviours (Greenberg et al., 2001). We therefore focused on risk and protective factors that were found to be related to internalising and/or externalising problem behaviour. The list of factors gave an overview of the main mendable risk and protective factors identified in the literature that impinge on children's social-emotional development, and as such should be the focus of preventive interventions on children's social behaviour.

These factors can be split up into social context factors and individual child factors. Previous studies have demonstrated that in the child's social context, peers, teachers and parents have influence on the behaviour of children (through mutual interactions). More specifically, it seems advisable to involve peers with a range of diverse problems in one intervention, to provide dominant children with an insight into their actual popularity and to interrupt the reinforcement of negative behaviour in a group. Interventions with parents can focus on stimulating parents' emotional involvement, affection, support and the consistent use of rules, as well as on discouraging physical and harsh punishment, neglectful rearing, aggressive parental behaviour, anxious rearing and too much parental control and rejection. Teachers and parents are also role models for children, which makes it important to teach them to set a good example themselves. In school, the ideas of parents regarding aggression have an influence on the child, which makes it advisable to intervene on their values regarding violence. And teachers can contribute to positive behaviour by investing in a positive relationship with the child and by adopting high expectations with regard to the child's behaviour. The child factors from which preventive interventions may profit include practising social skills in a peer group, training children in social information processing, training children in emotion regulation and stimulating a realistic self-worth in combination with respect for others.

Topper Training assumes that in addition to the risk and protective factors described earlier, two other elements are essential. Problem behaviour (internalising and externalising behaviour) is seen as non-authentic behaviour. To live authentically is defined as: to live according to one's desire, to do what fits you. The assumption of Topper Training is that most people have positive intentions. Most people have the desire to be trustworthy and a universal desire to be a good mother or father, a good student, a good friend and/or a good son or daughter. Topper Training aims to teach parents, teachers and children to affirm these positive intentions. This implies positive expectations with regard to the behaviour of others. Furthermore, Topper Training assumes that children can choose how to behave: they can be held responsible for their behaviour. Despite possibly disadvantageous circumstances and many other risk factors, it is assumed that people can choose how to deal with social situations. In the developmental psychology literature and in interventions, the roles filled by the child's own desires and sense of responsibility have not been the subject of much study. Nevertheless, the Topper Training constructs of authenticity and responsibility seem to be compatible with the established knowledge that resilience increases when students believe that personal characteristics can be developed (Dweck, 2006; Dweck, Chiu, & Hong, 1995) and with the ideas of Self-Determination Theory (Deci & Ryan, 2012; Ryan & Deci, 2000).

The second part of Chapter 2 described how Topper Training aims to intervene on most of these factors. Topper Training in mental healthcare centres is delivered in peer groups of children with diverse problems, together with their parents. In school, the intervention is given to whole classes, and a parent evening and the participation of parents during the lessons are also part of the intervention.

### **Psychometric Quality of the Topper Questionnaire**

Our second main research question was whether the Topper questionnaire was reliable and had adequate validity. In addition, our goal was to develop normative data for its use in primary (and special needs) education. The Topper questionnaire aims to measure social functioning in a classroom context in eight- to thirteen-year-olds. Chapter 3 demonstrated that the Topper questionnaire was able to reliably and validly measure four distinctive aspects of social functioning: Negative intentions, Unhappy & Gloomy, Prosocial and Restless & Disruptive behaviour. Internal validity was supported by confirmative factor analyses; we found a good fit for a four-factor model. The four subscales were reliable in terms of internal consistency. In addition, the Topper questionnaire was found to have moderate to good temporal stability over a 6-week period. Stability of the Negative intentions scores, however, appeared to be low. This result was probably due to a bottom-effect: most of the children did not have negative intentions, causing too little variation to make high correlations possible. Overall, correlations with other self-report instruments (PCSC, CDI and SAQ) were significant and of moderate to high strength and in accordance with our expectations and hence supported convergent validity. Correlations with teacher-report instruments (SDQ and IRPA) were moderate and in the expected directions. Differences between boys and girls were also in line with our expectations: boys scored significantly higher on Negative intentions and Restless & Disruptive and lower on Prosocial than girls. The effect sizes for these sex differences were small to moderate. No sex difference was found for Unhappy & Gloomy, which is in line with the results of earlier studies. Additionally, normative data were based on a representative sample of 10,552 children aged 8 to 13 in regular primary education, to be used in both regular and special needs primary education. In 2013, the Dutch Committee on Tests and Testing (COTAN) granted the questionnaire its approval. As a result, the Dutch Inspectorate of Education has approved the Topper questionnaire in August 2014 to measure social advances in education.

### **Effectiveness of Topper Training in School**

Our third main research question was whether Topper Training has a positive effect on classroom climate, self-esteem, depressed mood, aggression and prosocial behaviour in primary school classes with a negative classroom climate. We also

examined for which classes the training was most effective. Although there is a lot of attention being paid at the moment in the Dutch media to the issue of bullying, testing the effects on bullying itself was not the goal of this study, so we did not measure it here.

The results presented in chapter 4, from a quasi-experimental study on 696 children aged 8 to 13, provided the first indications of the effectiveness of Topper Training in a classroom context. At pre-test, the intervention classes scored lower on social acceptance and higher on teacher-rated disruptive behaviour and the children were half a year younger than the children in the control group. We corrected for these pre-test differences in the multi-level analyses. After a short intervention (15 hours) by a psychologist in the classroom, with the participation of parents, we found significant improvements in classroom climate in intervention classes that received Topper Training compared to control classes. Effect sizes (Cohen's  $d$ ) were .66 for relationship with the teacher and .86 for perceived social acceptance. These results are in accordance with earlier findings that pointed to the positive effects of eliminating bystander reinforcement on social relations between children (Salmivalli et al., 2011).

In addition to these classroom climate effects, significant positive effects were also found in individual child measures of self-esteem ( $d = .41$ ), depressed mood ( $d = .31$ ) and prosocial behaviour ( $d = .20$ ). No effect was found for self-perceived aggression. Half of the teachers reported a significant decrease in disruptive behaviour ( $d = 1.55$ ); the other half did not complete this last questionnaire. We did not find any moderation effects: the effects were the same for classes with more or less disrupted classroom climates. The results are in accordance with the finding in the meta-analysis of Wilson & Lipsey (2007) that involving parents, training in a peer group and social information processing training are all effective elements.

### **Effectiveness of Topper Training in Children with Psychosocial Problems**

Our next main research question was whether Topper Training in a mental healthcare setting would reduce internalising and externalising problems in children with mild to severe problems in social interaction. We also examined for whom the intervention was most effective and whether the effects persisted over a 6-month period. The studies described in chapters 5 and 6 were the first to examine these questions. In Chapter 5 we used a quasi-experimental design and a parent report measure to examine the effects of Topper Training. In Chapter 6 we examined the effects through a more stringent test, using a randomised controlled trial in combination with child, parent and teacher reports.

In the quasi-experimental study in Chapter 5, the intervention ( $n = 185$ ) and waitlist ( $n = 39$ ) control groups did not differ in age (range 8-11 years), gender, ethnic composition or any of the CBCL scales at pre-test. The results revealed significant decreases in the intervention group compared to the waiting list group for parent-reported overall problems ( $d = .46$ ), internalising problems ( $d = .39$ ), externalising problems ( $d = .33$ ), social relationship problems ( $d = .46$ ), aggression ( $d = .36$ ) and withdrawn depressed mood ( $d = .37$ ). Marginally significant effects were found for attention problems ( $d = .26$ ), anxious depressed problems ( $d = .29$ ) and somatic problems ( $d = .30$ ). We found no significant effects for rule-breaking behaviour or thought problems. We found no moderation effects for gender, age and externalising or overall problems: all these children profited to the same degree from the training. We did find a significant moderation effect for internalising problems, however. Children with clinical internalising problems at pre-test profited more from the intervention ( $d = .87$  for decrease in internalising problems) than children with fewer internalising problems ( $d = .06$ ). This is in accordance with earlier studies (see meta-analysis of Weisz, Sandler, Durlak, & Anton, 2005).

In the randomised controlled trial on 77 intervention and 55 waitlist control children, we found significant effects of Topper Training on parent-reported (but not teacher-reported) emotional problems ( $d = .60$ ), peer relationship problems ( $d = .28$ ) and impact of the problems on the child's life ( $d = .56$ ). Teachers only reported a significant effect on conduct problems ( $d = .35$ ). We also found significant effects on self-worth ( $d = .46$ ) and child-perceived victimisation ( $d = .64$ ) while no effect was found on child-perceived bullying. No significant effects were found for prosocial behaviour. The absence of these latter effects may be explained by the fact that the majority of the children in our sample had internalising problems: they were more likely to be victimised and hardly bullied themselves at pre-test. The same holds for prosocial behaviour (being helpful, kind and sharing): we found a ceiling effect here, which made improvements difficult. Effects on child-reported depression were not significant directly after the intervention, but depression decreased significantly from post-test to follow-up. We also found that the effects persisted over a 6-month period, suggesting durability of the effects.

Our results are in line with those from earlier intervention studies that focused on intervention programmes with components similar to Topper Training, including parent training (Incredible Years: Menting, Orobio de Castro, & Matthys, 2013; or PMTO; Dretzke et al., 2005; McCart, Priester, Davies, & Azen, 2006), training children in a peer group (Kiva; Salmivalli & Poskiparta, 2012) and cognitive behavioural strategies (Coping Power: Van de Wiel et al., 2007, and Alles Kidzzz (Stoltz, 2012); Brosnan & Carr, 2000; Sukhodolsky, Kassinove, & Gorman, 2003). The established

durability of the effects is in accordance with other treatment studies that found that the effects directly after treatment were similar to those found after five to six months (see meta-analysis: Weisz, Weiss, Han, Granger, & Morton, 1995).

We found significant effects on children's mean scores, but are these results relevant with regard to clinical practice? Or: when a child had problems in the clinical range, did the child score in the normal range after following the training? In chapter 6 we found that some, but not all, effects reported by children and parents were of clinical significance. The proportion of clinically scoring children at pre-test that showed movement to the normal range at post-test was significant compared to the control group for parent-reported emotional and conduct problems, impact of the problems and self-worth. This was not significant for the teacher-reported scales and for parent-reported peer problems and prosocial behavior, self-reported victimisation, bullying and depression. This, together with the finding that all effects lasted for a 6-month period, implies that this relatively short, low threshold intervention of ten sessions can have a significantly positive impact on children and can negate the need for more costly psychological care. Teachers reported comparable proportions of movements from clinical to normal range in the intervention group as parents did (between 30% and 70%), but they also reported these proportions for control children (between 56% and 62%), which made the results reported by the teacher - in terms of clinical significance - not significant.

### **Strengths and Limitations**

Based on their specific strengths, the studies summarised above may help to improve our knowledge regarding the effectiveness of Topper Training in classrooms and in mental healthcare centres. Firstly, we used internationally standardised measures like the Child Behaviour Checklist, Strengths and Difficulties Questionnaire, Child Depression Inventory, and Self-Perception Profile for Children. This, together with the multi-informant approach, ensured that we could validly and reliably measure the change in several child aspects from different perspectives: children, parents and teachers.

Secondly, we chose to measure a broad range of aspects: internalising and externalising behaviour, depressed mood, self-esteem, victimisation, bullying and classroom characteristics - relationships between children and between the teacher and children. This follows theoretical insights on multifinality (Caspi et al., 2014) that state that general psychopathological processes may give rise to a wider range of both internalising and externalising problems over the course of time. By incorporating a broad range of measures, we made it possible to examine the effect of Topper Training on this broad range of outcomes.



Thirdly, we tested the effectiveness in a heterogeneous sample of school classes and in a heterogeneous sample of children, which implies that many different types of school classes can profit from Topper Training. This idea is further supported by the fact that, in general, we did not find strong evidence for moderator effects with regard to the intervention outcomes. We only found one moderation effect in chapter 5, indicating that children with clinical level internalising problems profited more from Topper Training than those with non-clinical internalising problems.

A fourth strength of this dissertation is that the main results of chapter 5 were replicated in chapter 6 in a randomised controlled trial. This provides a more stringent test of the effectiveness of Topper Training. Moreover, the studies were all done in a real world setting, which makes translation to community contexts possible. The studies described in Chapters 4, 5 and 6 thus feature effectiveness trials that examine the impact of a programme under “real-world conditions”, unlike efficacy trials that examine trial effectiveness under optimal conditions of delivery (Flay et al., 2005, p. 153). Studies on effectiveness generally deliver less favourable results than studies on efficacy (e.g., Van der Lem et al., 2012). Given that effect sizes were small, moderate and sometimes high, Topper Training seems to be able to create significant change in the context in which it is generally delivered, and with the level of programme integrity that is characteristic of the programme in real life.

However, the real world conditions under which these studies were performed also brought with them some limitations. Specifically, the quasi-experimental designs employed in the studies featured in Chapters 4 and 5 implied that the intervention group could be different from the control group at pre-test. In the first mental healthcare study (Chapter 5), this limitation did not seem to be of great importance: although children were not randomly assigned to the control or intervention condition, their assignment depended only on time of application and both groups scored the same on all pre-test measures. Thus, allocation here appeared to be a random process. However, in the classroom study (Chapter 4) this limitation of between-groups pre-test differences was more important. In this study, ethical concerns led to a design that only allowed us to compare the development in the intervention classes in need of help to the development in ‘normal classes’ that were not in need of help. This led to baseline differences between the intervention and control groups on perceived social acceptance and teacher-reported disruptive behaviour. We still do not know how classroom climate might develop in disruptive classes in need of help that do not receive an intervention. It was remarkable that, after Topper Training, in classes in urgent need of help, social acceptance increased and disruptive behaviour fell to normal levels. These large improvements make it unlikely that the effects can be explained by regression to the mean or ‘more room

for improvement' alone. We think, therefore, also in accordance with the effects found in the other studies in this dissertation, that it is likely that Topper Training was responsible for these effects.

Another limitation of the three effect studies is that children, parents and teachers were not blind to the intervention condition. Expectations and desires of positive outcomes might therefore have coloured the answers on the questionnaires. Consequently, any actual effects of Topper Training might potentially be smaller than the measured effects in our studies. Although this is a concern for the internal validity of the studies, it is a common limitation in this type of effectiveness research (Wilson & Lipsey, 2007). It is, indeed, hard to imagine that children, teachers or parents could be blind to interventions that they engage in themselves. A somewhat compensatory feature in the current studies is the multi-informant reports used (Chapter 5: teacher and child reports; Chapter 6: child, teacher and parent reports). The importance of using multiple informants in effectiveness studies is emphasised by the different pattern of findings across informants in Chapter 6: in the RCT we found most effects on parents reports (emotional problems, peer relationship problems, impact of the problems on the child's life) and child reports (self-worth and self-perceived victimisation) and only conduct problems effects in teacher reports. This might be explained by parent and child involvement in the intervention and hence the expectation of improvement. It might also be that the effects have not yet been generalised into the school setting, or perhaps that teachers are more sensitive to perceiving changes in conduct problems in a classroom context compared to emotional problems that are not readily observable. A solution for this limitation of "unblindness" is to use observers that are blind to the intervention condition to observe child behaviour in the classroom or at home. A disadvantage of only using such observers, however, is that child experiences like depression, self-esteem, and feelings of victimisation, which are major goals of the intervention, cannot be measured observationally, as they are personal experiences.

Another limitation in these studies is the limited sample size. Although the samples were large enough to test for substantial effects, it remains impossible to generalise all results into the broad population of schools, classes and children. Therefore, this dissertation only delivers first evidence for the effectiveness of Topper Training. The results need to be replicated in larger samples to make more confident generalisation possible.

Finally, the position of the current researcher (working as a psychologist for the Topper Training Foundation while performing the present set of studies) merits some discussion. The stated 'conflict of interest' in this dissertation - which fundamentally refers to the issue of doing research as a neutral truth-finder while having an

ideological or social interest - is a common phenomenon (Eisner, 2009). Petrosino and Soydan (2005) reported that in 56% of the 281 criminological evaluation studies in their meta-analysis, the evaluation team included staff who also delivered the programme. Similarly, in a review of drugs-prevention programmes, 78% of 246 studies included the programme developer as one of the study authors and only 11% of the evaluations were completely independent. Research findings show that when researchers have a conflict of interest in the studied intervention, effect sizes are higher on average than in studies carried out by uninvolved researchers (Eisner, 2009). However, Eisner argues that this does not conclusively demonstrate bias due to conflict of interest. This finding can be the result of implementation quality or the number of participants, which may be correlated with the role of the evaluator. Indeed, an advantage of combining these two roles in one person may be that contact with practitioners and staff of the studied intervention can be much closer. As a consequence, the implementation of the intervention and the randomisation procedure are easier to explain to the practitioners and easier to control. In addition, unfortunately, government funding for intervention trials has, up until recently, been so scarce that school intervention programmes have had no choice but to fund evaluation research themselves (or not to evaluate at all, which is obviously not desirable). In fact, the present research was initiated in this fashion, while ensuring written agreements detailing strict control by independent university supervisors in a strictly regulated research environment. It remains an open question as to how the independence of researchers can be optimised while profiting from a liaison in close contact with practitioners.

Here, some suggestions as to how this could be achieved can be put forward. First, researchers with a conflict of interest should be transparent about their position. These days most journals ask authors to declare whether they have a conflict of interest so that this can be stated in the articles, but up until recently this was not common practice. Second, anonymised data must be available upon request at the university or other research institute. Third, before starting a study, the institution and the researchers should sign a contract to declare that they will study the effects independently and that they have the right and the obligation to publish the positive *and* negative results. In the current project, we fulfilled all three of these conditions. Another suggestion is to employ the person with the conflict of interest part-time as an employee at the independent research institute in order to ensure that the research project will be continued, irrespective of the results found.

## Theoretical and Practical Implications and Future Study Ideas

The results of this dissertation are promising: a widely implemented intervention in the Netherlands appears to be effective, based on examination in routine daily practice. What are the theoretical and practical implications of our results and what are future study ideas?

A growing body of evidence highlights the benefits of implementing evidence-based prevention for young people (Institute of Medicine, 2009). However, there is a research-to-practice gap, in the sense that theoretically driven interventions that have been found to be effective appear to have problems in terms of transportability, dissemination and in proving effectiveness in real world practice (Schoenwald & Hoagwood, 2001). At the same time, many interventions for young people are being delivered in schools and mental healthcare centres despite they are not having been studied in terms of effectiveness. The current thesis bridges this gap between research and practice by providing evidence for the effectiveness of a broadly disseminated programme used in one out of five schools and in many mental healthcare centres in the Netherlands. This thesis provides first evidence that Topper Training, as delivered in real world practice, *is* indeed effective for children with emotional and behavioural problems and for primary school classes with a negative classroom climate.

Bridging this research-to-practice gap is relevant for local authorities in the Netherlands. As mentioned in the introduction, a policy change currently taking place in the Netherlands called the 'Transition of youth care' has moved the responsibility for youth mental healthcare from national to local authorities. Prevention and interactions between school and mental health care have become more important. The finding that an intervention that is already practiced on a large scale is effective is promising. The results also have practical implications for schools. Schools in the Netherlands need to adopt an intervention that effectively promotes active citizenship and social integration (MOCW, 2005) and that focuses on the prevention and curation of bullying. Active citizenship is described as the willingness and the ability to participate in society and to make an active contribution to society. Social integration is described as having knowledge of and participation in the Dutch culture (MOCW, 2005). Main goal of this law is to increase social bonding between people and to pay attention to the Dutch culture. Topper Training is directed at most of the goals formulated in this law. With regard to bullying, as a direct consequence of suicides in the Netherlands that were associated with being bullied, in 2013 the Ministry of Education introduced the idea that every school should adopt an evidence-based programme against bullying. For this purpose, in January 2014 a committee was formed to evaluate anti-bullying programmes in the Netherlands on

their evidence base. Both the theoretical framework and empirical evidence were evaluated (Nederlands Jeugdinstituut, 2014). Of the 61 submitted interventions, none was approved definitively (seen as providing enough theoretical and empirical evidence), nine were tentatively approved and four were tentatively rejected. The nine interventions that were tentatively approved need further empirical studies and/or theoretical framework to achieve full approval. Topper Training is one of these nine interventions. The first results of the RCT in mental healthcare centres described in chapter 6 indicate that children felt less victimised after the intervention. Earlier studies indicated that improving relationships between children and between children and teachers can have a positive effect on the number of victimised children (Smith, Ananiadou, & Cowie, 2003). Additional research is needed to explore the effects of Topper Training on bullying and victimisation when teachers give the programme as a universal intervention. From May 2015 to May 2017, this will indeed be studied. The Dutch government has made funds available to study promising intervention programmes in the Netherlands for bullying.

When aiming to measure bullying, one must keep in mind that researchers have assumptions about bullying. For example, some may have the idea that bullying is a measurable behaviour. Another perspective is that some people experience certain behaviour as bullying, while other people do not experience it as such at all. Research even shows that there is a small group of children who perceive themselves as victimised, while their classmates do not share this perception (Graham and Juvonen, 2001). Using this idea as a starting point, an intervention can bring about significant changes in the experience of being victimised, while the actual behaviour of the apparent bully may stay the same. Therefore, in addition to assessments of actual or peer-reported bullying, it may also be useful to measure perceived victimisation. Another reason to use self-reports is that experienced victimisation may have a greater influence on the well-being of the child than peer-reported bullying: when a child does not experience certain behaviour as bullying, it may have less impact.

Another important aspect when studying the effects in teacher-delivered Topper Training is programme implementation. Previous research shows that the effectiveness of well-designed programmes depends on high-quality implementation (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). The level of implementation should therefore be carefully studied. Earlier studies on other programmes highlighted aspects that influenced the effectiveness of the programmes. These aspects should be measured in future studies. They include preparation time for each lesson, percentage of programme that is delivered (Salmivalli, Poskiparta, Ahtola, & Haataja, 2013) and whether these are the key elements (Dusenbury, Brannigan, Falco, & Hansen, 2003); length and intensity of lessons (Hahn, Farrington, & Ttofi, 2012);

outcome expectations, experienced effectiveness and perceived practical usability of the programme (PATHS programme; Schultes, Stefanek, Van de Schoot, Strohmeier, & Spiel, 2014); personal advantage and subjective norms (PATHS program, Louwe & Overveld, 2008); support for the program from teachers and school board (Louwe & Overveld, 2008). On the school level, aspects that have been found to matter were length and intensity of teacher training (Hahn, Farrington & Ttofi, 2012); working climate: interactions with colleagues (McCormick, Steckler, & McLeroy, 1995); being able to give the intervention as a team (Louwe & Overveld, 2008); school climate; and the extent to which the culture of the programme is implemented (Coyle, 2008; Louwe & Overveld, 2008). In future studies, when enough classes participate and enough variation occurs between classes in implementation, this might create the possibility of examining which elements of the intervention are associated with more positive outcomes.

The study in the school context described in Chapter 4 revealed an unexpected finding. We found that classes in need of help and classes that were not in need of help did not differ at pre-test with regard to measures of individual child functioning variables like aggression, self-esteem, prosocial behaviour and depressed mood. The classes only differed in terms of classroom climate: perceived social acceptance of classmates was lower and teacher-rated disruptive behaviour was higher in classes that were in need of help. This implies that 'problematic' classes cannot be reduced to classes in which 'some children misbehave'. Apparently, it is not the individual behaviour of some students that is problematic but the group-based interactions between the children and between the children and the teacher. This is in line with the finding that improving the relationships between classmates and also between the teacher and students has been found to reduce victimisation for individual children (Smith et al., 2003). This finding backs up the effectiveness of the group-based method of Topper Training wherein bystander reinforcement is eliminated (as was also found by Salmivalli et al., 2011) and children learn to give each other feedback in a respectful way in order to inform the other about the impact of their behaviour on the other.

We measured self-esteem and found that children in our samples (chapter 4 and 6) reported an increase in self-esteem after Topper Training. This is interpreted as a positive effect. However, in Chapter 2 we explained that high self-esteem does not necessarily imply a positive development because a high self-esteem in combination with a narcissistic self-view is found to increase aggressive reactions to shameful situations (Thomaes, 2007). It appears to be more important for a child to have a realistic self-image, i.e. being able to recognise and accept one's strengths and weaknesses, than it is to have high self-esteem (Thomaes, Reijntjes, Orobio

de Castro, & Bushman, 2009). Children with a realistic self-view were found to be the least vulnerable to social rejection. It would be interesting in future research to measure whether children appear to have a more realistic self-view after following Topper Training. Distortion of self-view can be measured by assessing actual status ("rate the degree to which you like your classmates") and subtracting from this the perceived status ("predict the ratings you would receive") (Orobio de Castro et al., 2007); Owens, Goldfine, Evangelista, Hoza, & Kaiser, 2007). Since Topper Training provides children with respectful feedback through their peers while creating an overt sociogram, this might help to create a more realistic self-view.

With regard to future studies, it would perhaps be a good idea to use an active 'placebo' intervention comparison group that receives the same amount of attention and supervision, but without the presumed effective treatment components. While this is very common in pharmaceutical studies, in social sciences it is less so. For example, Merry and Spence (2007) found that none of the studies on interventions for depression that they reviewed used an attention control group. An advantage of using an attention control group is that one can pinpoint more exactly what actually works. Thus, elements such as attention and outcome expectations can be separated from other effective elements.

Another aspect that may be worthy of further study is the effect of Topper Training on academic performance. An assumption of Topper Training is that in a positive classroom climate children will have more opportunities to learn. It has been found that children who work in a negative classroom climate run an increased risk of behavioural problems and low academic achievement (Elias, 2003). We think that large effects on social aspects such as classroom climate are needed in order to establish the effects on academic performance, because many factors other than social behaviour may have an influence on academic performance. Nevertheless, it would be interesting to assess whether proper implementation of Topper Training has a positive effect on academic performance.

The introduction of this dissertation stated that Topper Training is a comprehensive programme: it involves programme aspects for children, peers, teachers, parents and heads of the school. On the basis of current studies, it is not possible to determine which of the programme aspects are responsible for the effects. Although we found positive effects for Topper Training, effect sizes were still in the small to moderate range, with some effect sizes being high. Similar magnitudes for effect sizes were found in earlier studies on other interventions (Wilson & Lipsey, 2007). A question remains as to how we can best enhance classroom climate and reduce psychosocial problems. Which elements are crucial for the effects and should be elaborated within an intervention to optimise effect sizes? In aiming to find these crucial elements, in future effect studies

it would be interesting to measure several mediators that we described in Chapter 2 as influencing factors on positive social interactions, such as social information processing style, social skills, emotion regulation, parent and teacher behaviour and peer behaviour (e.g. do peers reinforce negative behaviour?), and also the additional Topper Training elements - sense of responsibility for their own behaviour and whether people around the child affirm children's positive intentions. As previously mentioned, these latter elements are underrepresented in the developmental literature. We think that the current results are a good starting point with regard to examining the value of these elements in further studies. Specifically, an interesting question would be: does a sense of responsibility in social interactions like bullying improve children's ability to resolve these situations? It would be a good idea to test whether changes in a child's sense of responsibility ('I can choose how to react in various social situations'), which are expected to occur during Topper Training, can predict changes in social problem solving behaviour. Another idea is to prime children in taking responsibility and to subsequently get them to solve an interpersonal conflict situation. One advantage of the first idea is that it enables children to learn the social skills needed to react in these situations, which is a prerequisite to react. Studying the role of these possible mediators can bring us closer to a more comprehensive knowledge of what works for children with psychosocial problems and problematic classes.



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# Samenvatting

(Summary in Dutch)



Sociale interacties zijn al op jonge leeftijd van groot belang voor de geestelijke gezondheid van kinderen. Kinderen die moeite hebben met sociale interacties, lopen een hoger risico om afgewezen te worden door leeftijdsgenoten. Dat kan vervolgens psychosociale problemen veroorzaken. Ook een slecht klassenklimaat - waarin kinderen zich afgewezen voelen door klasgenoten en/of een slechte band met de leerkracht hebben - is een voorspeller voor emotionele problemen en gedragsproblemen. Tijdige preventie van deze problemen kan ervoor zorgen dat deze niet verergeren. Hierdoor kunnen leed en kosten worden bespaard. In dit proefschrift wordt de Kanjertraining voor het eerst onderzocht op zijn effectiviteit. De resultaten zijn praktisch relevant voor gemeenten en scholen omdat de training zowel preventief op scholen, als curatief in de jeugdzorg op grote schaal wordt toegepast. In Nederland zijn interventies beoordeeld op hun theoretische basis en bewezen effecten. De beschrijvingen van de interventies zijn verzameld in de Databank Effectieve Jeugdinterventies van het Nederlands Jeugd Instituut. De Kanjertraining blijkt hierin de enige interventie die gericht is op sociale interacties met een universele, een indicatieve en een klassencrisis-interventie, voor een brede doelgroep van kinderen en adolescenten tussen 4 en 15 jaar op school en in de particuliere jeugdzorg (DEI, 2015).

Dit proefschrift richt zich op drie hoofdvragen.

1. Op welke factoren zouden preventieve interventies zich moeten richten om sociale interacties bij basisschoolleerlingen te bevorderen? Hoe sluiten de principes en elementen van de Kanjertraining hierbij aan?
2. Wat zijn de psychometrische eigenschappen van de Kanjervragenlijst met betrekking tot betrouwbaarheid, validiteit en normen?
3. Wat zijn de effecten van de Kanjertraining op sociaal vastgelopen klassen en op kinderen met milde tot ernstige psychosociale problemen die worden getraind in psychologenpraktijken?

De eerste onderzoeksvraag wordt behandeld in hoofdstuk 2. Hier worden factoren beschreven die samenhangen met de ontwikkeling van sociaal gedrag. Preventieve interventies zouden zich op deze factoren moeten richten om emotionele problemen en gedragsproblemen te voorkomen of te verminderen. Het gaat om sociale-contextfactoren zoals leeftijdsgenoten, ouders en school en om kindfactoren zoals sociale vaardigheden, sociale informatieverwerking, emotieregulatie, een realistisch zelfbeeld en een positieve kijk op de ander. De Kanjertraining richt zich op de meeste van deze factoren. Naast deze veel onderzochte factoren speelt de Kanjertraining in op twee andere aspecten. Als eerste heeft de Kanjertraining als uitgangspunt dat

bijna alle kinderen en volwassenen het verlangen hebben om te vertrouwen te zijn en om een 'goede' leerling/vriend/kind te zijn. Zowel te pittig gedrag als te angstig gedrag wordt gezien als niet authentiek; dat wil zeggen: de persoon leeft niet naar zijn verlangen. De Kanjertraining beoogt ouders en leerkrachten te leren om erop te vertrouwen dat kinderen dit positieve verlangen hebben en kinderen hierop aan te spreken. Ten tweede leren kinderen vervolgens verantwoordelijkheid te nemen voor hun gedrag. Ditzelfde geldt voor ouders, leerkrachten en directeuren. Om deze ideeën duidelijk te maken gebruikt de Kanjertraining vier petten die staan voor vier typen gedrag: te dominant krachtig, te angstig verlegen, te jolig onverschillig en betrouwbaar gedrag met respect voor jezelf en de ander. Het is de bedoeling van Kanjertraining om kinderen zo bewust te maken van hun gedrag, te laten oefenen met Kanjergedrag en te leren in dagelijkse situaties hiervoor te kiezen. De volgende vijf Kanjerafspraken worden in school en in psychologenpraktijken toegepast: We vertrouwen elkaar. We helpen elkaar. Niemand speelt de baas. Niemand lacht uit. Niemand blijft zielig.

De tweede onderzoeksvraag wordt beantwoord in hoofdstuk 3. Hier worden de constructie, betrouwbaarheid, validiteit en normen van de Kanjervragenlijst beschreven. Deze vragenlijst meet sociaal functioneren in de klas bij acht- tot dertienjarigen. De Kanjervragenlijst bleek betrouwbaar en valide vier constructen te meten, namelijk Onrustig verstorend gedrag, Hulpvaardig sociaal gedrag, Ongelukkig somber en Negatieve intenties. Interne validiteit werd bevestigd met een confirmatieve factoranalyse. Het model met vier factoren liet een goede 'fit' zien. De betrouwbaarheid in termen van interne consistentie was goed voor alle schalen. De stabiliteit van de scores over een periode van zes weken in termen van test-hertest-betrouwbaarheid was matig tot goed. De stabiliteit van de schaal Negatieve intenties bleek echter laag te zijn. Dit lijkt te worden veroorzaakt door een bodemeffect: de meeste kinderen scoorden erg laag op Negatieve intenties, waardoor er weinig spreiding was. De schalen bleken convergent valide te zijn: scores hingen in de verwachte richtingen samen met zelfbeoordelingslijsten (CBSK, CDI en SVL) en hingen matig sterk samen in de verwachte richtingen met leerkrachtlijsten (SDQ en IRPA). Jongens en meisjes verschilden in hun scores op de verwachte manier: jongens scoorden hoger op Negatieve intenties en op Onrustig verstorend en lager op Hulpvaardig sociaal. In lijn met eerder onderzoek bleken jongens en meisjes niet te verschillen op *Ongelukkig somber*. We verwachtten en vonden ook verschillen tussen kinderen met verschillende sociaal-economische status (opleiding van de ouders). Op scholen met meer dan een kwart van de leerlingen met een lager opgeleide ouder scoorden de kinderen hoger op Negatieve intenties en Ongelukkig somber dan op scholen met minder dan 10 procent van deze leerlingen. We hebben

daarnaast normen geformuleerd op basis van een representatieve steekproef van 10.552 basisschoolleerlingen tussen 8 en 13 jaar. Deze normen zijn toepasbaar in het reguliere en speciaal basisonderwijs. In 2013 is de Kanjervragenlijst positief beoordeeld door de Commissie Testaangelegenheden Nederland (COTAN, 2013). Vanaf augustus 2014 erkent de Onderwijs Inspectie de lijst als maat voor sociale opbrengsten in basisscholen.

De laatste onderzoeksvraag is onderzocht in drie aparte studies, beschreven in hoofdstuk 4, 5, en 6. In al deze studies werd de Kanjertraining onderzocht zoals deze wordt gegeven in de dagelijkse praktijk door psychologen. Dit is relevant omdat de Kanjertraining al breed wordt toegepast op één op de vijf scholen en in ongeveer twintig psychologenpraktijken.

In hoofdstuk 4 wordt het eerste onderzoek naar de effecten van de Kanjertraining beschreven. In een quasi-experimenteel design werden 14 sociaal problematische klassen ( $n = 353$  leerlingen, acht- tot dertienjarigen) die hulp inriepen bij Stichting Kanjertraining en die Kanjertraining kregen door een psycholoog, vergeleken met 14 klassen ( $n = 343$  leerlingen, acht- tot dertienjarigen) op dezelfde scholen. Voor aanvang van de training scoorden de interventieklassen lager op Sociaal aanvaard voelen en hoger op Storend gedrag naar inschatting van de leerkracht. Ook waren de leerlingen gemiddeld een half jaar jonger dan in de controlegroep. We hebben in de analyses gecorrigeerd voor deze verschillen. De klassen verschilden niet op individuele maten, etniciteit en geslacht. Na een korte interventie (15 uur in totaal) door een psycholoog in de klas met betrokkenheid van de ouders, vonden we significante verbeteringen in het klassenklimaat in de interventieklassen ten opzichte van de controle-wachlijstgroep. Effectgroottes (Cohen's  $d$ ) waren ,66 voor Relatie met de leerkracht en ,86 voor Sociaal aanvaard voelen. Deze resultaten zijn onder andere in lijn met eerder onderzoek dat liet zien dat het verminderen van het bekrachtigen van negatief gedrag door klasgenoten kan zorgen voor betere sociale relaties tussen kinderen (Salmivalli e.a., 2011). Er waren ook positieve effecten op de kindvariabelen zelfwaardering ( $d = ,41$ ), depressieve gevoelens ( $d = ,31$ ) en prosociaal gedrag ( $d = ,20$ ). Er was geen effect op zelf-gerapporteerde agressie. De helft van de leerkrachten vulde een lijst in over verstorend gedrag van de klas. Deze leerkrachten ervoeren een grote vooruitgang: effectgrootte was  $d = 1,55$ . Er werden geen moderatie-effecten gevonden: de effecten waren hetzelfde voor de verschillende klassen met verschillend klassenklimaat. De resultaten komen overeen met eerdere studies waaruit bleek dat het werkzaam is om ouders te betrekken, kinderen met hun leeftijdsgenoten in een groep te trainen en te werken aan de sociale informatieverwerking van leerlingen (Wilson & Lipsey, 2007).

In hoofdstuk 5 en 6 worden de effecten van de Kanjertraining beschreven op psychologenpraktijken bij kinderen met milde tot ernstige psychosociale problemen. In hoofdstuk 5 onderzoeken we dit in een quasi-experimenteel design met ouderrapportages. In hoofdstuk 6 onderzoeken we dit met een stringentere toets: een gerandomiseerde gecontroleerde effectstudie (RCT) met kind-, ouder- en leerkrachtrapportages. In hoofdstuk 5 blijkt dat de interventiegroep ( $n = 185$ ) en de controle-wachtlIJstgroep ( $n = 39$ ) op de voormeting niet verschilden in leeftijd (van 8 tot 11 jaar), sekse, etniciteit of Child Behavioral Checklist (CBCL)-scores. Na de interventie (10 lessen van 1,5 uur met ouders en kinderen) bleek de interventiegroep significant verbeterd ten opzichte van de controlegroep op totale problemen ( $d = ,46$ ), internaliserende problemen ( $d = ,39$ ), externaliserende problemen ( $d = ,33$ ), sociale problemen ( $d = ,46$ ), agressie ( $d = ,36$ ) en teruggetrokken depressieve gevoelens ( $d = ,37$ ). We vonden marginaal significante effecten op aandachtsproblemen ( $d = ,26$ ), angstig depressieve gevoelens ( $d = ,29$ ) en lichamelijke klachten ( $d = ,30$ ). We vonden geen significante effecten op grensoverschrijdend gedrag en denkproblemen. Er waren geen moderatie-effecten van sekse, leeftijd en externaliserende of totale problemen: al deze kinderen profiteerden evenveel van de training. We vonden wel een moderatie effect op internaliserende problemen. Kinderen met klinische internaliserende problemen op de voormeting bleken een sterkere afname in deze problemen te laten zien ( $d = ,87$ ) dan kinderen met minder hoge internaliserende problemen bij aanvang ( $d = ,06$ ). Dit moderatie-effect komt overeen met eerder onderzoek (zie Weisz, Sandler, Durlak, & Anton, 2005).

In de gerandomiseerde gecontroleerde effectstudie, beschreven in hoofdstuk 6, met 77 interventie en 55 wachtlIJst kinderen, vonden we significante effecten van Kanjertraining op ouder-gerapporteerde (maar niet op leerkracht-gerapporteerde) emotionele problemen ( $d = ,60$ ), problemen met leeftijdsgenoten ( $d = ,28$ ) en de impact van de problemen op het leven van het kind ( $d = ,56$ ). De leerkracht ervoer alleen een significant effect op gedragsproblemen ( $d = ,35$ ). Verder vonden we significante effecten op zelfwaardering ( $d = ,46$ ) en het gevoel gepest te worden ( $d = ,64$ ), maar geen effect op zelf-rapportage van pesten en prosociaal gedrag. Dit laatste zou verklaard kunnen worden doordat de kinderen in onze steekproef voornamelijk internaliserende problemen lieten zien. Ze scoorden bij aanmelding hoger op gepest worden en gaven nauwelijks aan zelf te pesten. Op zelf pesten viel dus geen vooruitgang te boeken. Ditzelfde gold voor prosociaal gedrag (hulpvaardig, aardig en delen). Hier vonden we ook een plafond-effect. Het effect van Kanjertraining op depressie was direct na de training niet significant. De controlegroep liet een gelijke afname in depressie zien als de interventiegroep. Een half jaar na de training bleek de depressie in de interventiegroep wel significant



afgenomen ten opzichte van direct na de training. Alle gevonden effecten bleken een half jaar na de training nog te bestaan; kinderen vielen niet terug. De resultaten volgens de ouders en kinderen bleken bovendien klinisch relevant. 69% van de kinderen met een lage zelfwaardering en 64% van de kinderen met ernstige gedragsproblemen ging zonder deze problemen weer de deur uit. Dit gold voor 47% van de kinderen met emotionele problemen. In de controlegroep lagen deze percentages significant lager, respectievelijk 13%, 17% en 16%. Deze bevinding suggereert dat deze relatief korte laagdrempelige interventie van tien sessies wellicht kosten en erger kan besparen door vroeg in te grijpen. De resultaten volgens de leerkrachten waren niet klinisch relevant. De proportie kinderen die van klinisch naar normaal gingen, bleek gelijk voor de interventie groep (tussen 30% en 70%) en de controlegroep (tussen 56% en 62%).

Ten slotte worden in hoofdstuk 7 de resultaten afgezet tegen uitkomsten van eerder onderzoek. De hoofdconclusies worden geïnterpreteerd in het licht van een aantal methodologische beperkingen van het onderzoek. Ten eerste moeten de resultaten van hoofdstuk 4 voorzichtig worden geïnterpreteerd. De interventiegroep was bij de voormeting niet gelijk aan de controlegroep qua klassenklimaat. Dit komt doordat de interventieklassen problematisch waren en hulp wilden. Er is gekozen al deze klassen zo snel mogelijk een Kanjertraining te geven. Het was ethisch niet verantwoord deze klassen te laten wachten ten bate van het onderzoek. Om de ontwikkeling tijdens de training toch af te kunnen zetten tegen een normale ontwikkeling zonder training, is ervoor gekozen andere niet-problematische klassen op dezelfde scholen als vergelijkingsgroepen in het onderzoek mee te nemen. Het blijft onbekend hoe problematische klassen zich zouden hebben ontwikkeld zonder training. De resultaten zijn echter wel opmerkelijk: de problematische klassen verbeterden op Sociaal aanvaard voelen en Verstarend gedrag naar normale levels, vergelijkbaar met de niet-problematische klassen. In vervolgonderzoek zou het interessant zijn de ontwikkeling van de interventieklassen te vergelijken met even moeilijke klassen die geen training volgen of, ethischer, twee interventies met elkaar te vergelijken. Een tweede limitatie is dat de gevonden effecten misschien wat hoger zijn gemeten dan ze werkelijk zijn, omdat kinderen, ouders en leerkrachten niet blind waren voor de interventieconditie. Een oplossing hiervoor zou kunnen zijn om mensen die blind zijn voor de trainingsconditie het kind te laten observeren. Nadeel is dat ervaringen van het kind dan niet gemeten kunnen worden (zoals zelfwaardering, depressie en het gevoel gepest te worden). Als laatste snijden we in hoofdstuk 7 een discussiepunt aan. De positie van de huidige onderzoeker - werkend als psycholoog bij Stichting Kanjertraining terwijl ze ook onderzoek deed naar de effecten van deze Kanjertraining is een veelvoorkomend fenomeen (Eisner, 2009).

Uit onderzoek blijkt dat effectgroottes over het algemeen iets groter zijn wanneer het onderzoek is uitgevoerd door een onderzoeker die betrokken is bij de interventie. Dit betekent echter niet dat er sprake hoeft te zijn van een bias in de interpretatie van de onderzoeksresultaten (bijvoorbeeld een te rooskleurige interpretatie van effectiviteit) of onjuiste omgang met de onderzoeksgegevens (Eisner, 2009). Het feit dat in onderzoek door betrokkenen effectgroottes over het algemeen hoger uitvallen kan ook verklaard worden doordat de interventie beter geïmplementeerd wordt door de motivatie en inhoudelijke kennis van een betrokken onderzoeker, in vergelijking met een niet-betrokken onderzoeker. Het blijft een open vraag hoe de voordelen van de hoge betrokkenheid als onderzoeker zijn te combineren met het doen van onafhankelijk onderzoek. Hiervoor gaven we een aantal suggesties: transparantie over de onderzoekerspositie, inzage mogelijkheid in de ruwe data en het tekenen van een contract tussen de instelling en de universiteit waarin staat dat de effecten onafhankelijk onderzocht gaan worden en dat de universiteit het recht en de plicht heeft om de resultaten - ongeacht de uitkomst - te publiceren. In het huidige project zijn deze acties inderdaad ondernomen en we raden toekomstige onderzoekers aan eenzelfde protocol na te volgen.

Concluderend geeft dit proefschrift eerste aanwijzingen voor de effecten van de Kanjertraining zoals in de dagelijkse praktijk gegeven op scholen en psychologenpraktijken. Vervolgonderzoek naar de effecten van de Kanjertraining op scholen gegeven door leerkrachten is zinvol. Hierbij zou extra aandacht gegeven kunnen worden aan de effecten op pesten, te meer omdat de overheid in Nederland wil dat scholen een bewezen effectieve anti-pest-interventie gaan implementeren. In hoofdstuk 7 worden hier adviezen voor geformuleerd. Op basis van de huidige onderzoeken is niet vast te stellen welke elementen van de Kanjertraining verantwoordelijk zijn voor de gemeten effecten. Ondanks de positieve effecten van de Kanjertraining die hier zijn beschreven, zijn de gevonden effectgroottes matig tot gemiddeld en soms groot. Daarmee blijft de vraag relevant hoe we optimaal het klassenklimaat kunnen verbeteren en psychosociale problemen kunnen verminderen. Om cruciale werkzame elementen te vinden zou het goed zijn onderzoek te doen naar mediators die genoemd zijn in hoofdstuk 2, zoals sociale informatieverwerking, sociale vaardigheden, emotieregulatie, ouder- en leerkrachtgedrag en gedrag van leeftijdsgenoten. Dit geldt ook voor de twee aanvullende elementen die de Kanjertraining hanteert: kinderen aanspreken op hun positieve verlangens en verantwoordelijkheid voor hun eigen gedrag.

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# Curriculum Vitae





Lilian Vliek was born on the 26<sup>th</sup> of August, 1981, in Nijmegen. She graduated from high school (VWO) in 1999, after which she moved to Maastricht in order to study psychology - specialising in biological developmental psychology. During this time she gave the Discrete Trial Training to autistic children, worked as a student teacher in Statistics and was a member of the board of the Student Theatre Association. After completing her studies (cum laude), she did research at Maastricht University and was involved in the development of the 3DM, a new diagnostic test for dyslexia. Between 2007 and 2015 she worked on her dissertation, gave Topper Training courses to primary school children and teachers and she became mother of three children. Currently, she still works for the Topper Training Foundation as a psychologist and intends to study the effects of specific elements of Topper Training on social behaviour and classroom climate.