

Social Emotional Consequences  
of Accelerating Gifted Students

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# Social Emotional Consequences of Accelerating Gifted Students

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*In herinnering: Madeleine Jochems  
Mijn paranimf  
Mijn lieve wijze vriendin*



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INTRODUCTION

According to Dutch law, elementary education should enable students to go through a continuous developmental process. This implies that progress in a student's development is what determines education (art. 8 of the Law on Dutch Primary Education: Ministry of Education, Culture, and Science, 1998). Research has made it clear that the development of students at school can vary greatly (Cito Groep, 2006; Driessen, van Langen, & Vierke, 2006). Some students make slower progress than others and may need extra care and individual help that is geared to their specific needs (art. 8 of the Law on Dutch Primary Education, part 4). Other students may progress much faster but also need special attention and help, which — in keeping with the recommendations of the Dutch Educational Council (Onderwijsraad, 2004) — should be provided in a timely fashion to prevent the occurrence of problems. While academic acceleration is commonly undertaken for this purpose, very little is known about the social-emotional effects of this educational practice. The topic of the present thesis is therefore educational programs for gifted students in general and the social-emotional effects of academic acceleration in particular.

In the following, we will briefly present the most prevalent definitions and models of giftedness and gifted education with a focus on academic acceleration. We will then summarize the outcomes of previous research on the effectiveness of this type of gifted education. Thereafter, the results of an international review of educational programs, including acceleration, for gifted students will be presented. The results of three empirical studies on the social-emotional effects of academic acceleration will also be presented. And, in closing, the results of the four research studies will be combined to draw some conclusions about the effects of academic acceleration and present some evidence-based recommendations for gifted education in general and academic acceleration in particular.

## **Background**

### *Gifted children*

A major issue in discussions of gifted education is the definition of giftedness. The large number of attempts to come to a useful and scientifically defensible definition of giftedness indicates the complexity of the concept (see the extensive chapters on this topic in Colangelo & Davis, 2003; Heller, Mönks, Sternberg, & Subotnik, 2000; Sternberg, 2004; Sternberg & Davidson, 2005). Traditional definitions that assume high achievement to be largely inherited (Galton, 1869, 1892) or the result of a general giftedness factor “g” (Spearman, 1927), which can be expressed by a single score on an intelligence test, are virtually unaccepted nowadays. There is, rather, broad agreement that giftedness involves more than just a high IQ (Sternberg, 2004). Contemporary definitions recognize multiple forms of giftedness (see, for example, von Károlyi, Ramos-Ford, & Gardner, 2003). Potential versus achievement are distinguished today, and the interaction of innate and stable factors (i.e., potential) with various intrapersonal factors (e.g., motivation, attitude) and environmental factors (e.g., family, school) are considered (Gagné, 1993; 2000; 2003; Heller, 1992; Mönks, 1992; Renzulli, 1978).

While many models of high ability are psychometrically grounded and largely oriented towards abilities and traits, more recent models emphasize the cognitive component of high ability and domain-specific competence. Sternberg (2002), for example, has introduced the concept of successful intelligence (see also Sternberg & Grigorenko, 2004). According to this concept, someone is successfully intelligent when he or she recognizes his or her strengths and makes the most of them while also, at the same time, recognizing his or her weaknesses and finding ways to correct or compensate for these. For successful intelligence, a balance must exist between three types of thinking: analytical, creative, and practical thinking. In an elaboration of his model of successful intelligence, Sternberg (2003) has introduced the WICS (i.e., wisdom, intelligence, creativity, synthesized) model in which wisdom is assumed to involve both academic and practical intelligence as

well as creativity and knowledge used for a common good. As an alternative to traditional intelligence tests, which measure mostly analytic abilities and achievement according to Sternberg (2003), Sternberg and his colleagues are currently developing an assessment instrument for giftedness in children, the Aurora Battery, which is based upon the theory of successful intelligence (Sternberg, 2007).

All current approaches to giftedness agree that children with high abilities will only capitalize on these abilities when other personal and environmental conditions are sufficiently supportive. One crucial environmental condition, of course, is the education that the child is given. Regular education aimed at students with average abilities or somewhat lower or higher abilities will not meet the needs of children with particularly high abilities. The gifted child in an educational program that is not aimed at his or her potential will thus become bored, not acquire the special learning strategies that he or she needs, and feel alienated in a classroom where he or she does not seem to really belong. As Gagné (2003) states it, outstanding gifts will remain just possibilities in such a situation.

Gifted education is a form of education designed specifically for gifted students. Gallagher (2003) distinguishes three ways in which an educational program can be modified for gifted education purposes: the learning environment can be changed, the content of the curriculum can be changed, or various alternative learning strategies can be emphasized. These changes can be used alone or in combination with each other for purposes of gifted education. And one practice frequently applied for purposes of gifted education is acceleration.

#### *Academic acceleration*

Pressey (1949, cited by Southern & Jones, 1991-a) was the first person to define academic acceleration in the following manner: "Progress through an education program at rates faster or ages younger than conventional." There are currently many forms of academic acceleration with varying impact (see, for example, Rogers & Kimpston, 1992; Southern & Jones, 2004; Southern, Jones, & Stanley,

1993). Southern and Jones (2004) recently outlined five dimensions that academic acceleration can differ along. The first dimension is pacing: Some programs involve a change of pace such as curriculum compaction, subject-matter acceleration, and — of course — grade skipping while other programs use forms of administrative recognition for a student's achievement such as credit by examination. Acceleration programs can also differ with regard to salience; grade skipping is much more noticeable, for example, than subject-matter acceleration. Many people consider a high degree of salience to be a risk as it can sometimes elicit conflict with regard to such value issues as elitism or egalitarianism (Southern & Jones, 2004). A third dimension for acceleration programs to vary along is the degree of social separation of the relevant students from peers, which is something that can worry both teachers and parents (Hoogeveen, 2000; Jones & Southern, 1991b; Southern, Jones, & Fiscus, 1989). The fourth dimension concerns access and the question of which programs are actually made available at a school. The fifth and final dimension concerns the age at which the student is offered acceleration options.

#### *Social-emotional consequences of acceleration*

Although parents and teachers worry most about the social-emotional consequences of acceleration, this aspect of the educational measure has been least studied up until now. Definitions of social-emotional characteristics are very diverse but often involve the frequency and quality of social interactions as well as such intrapersonal characteristics of the student as self-concept, social-emotional well-being, and attitudes.

The results of empirical studies on the academic performances and social-emotional well-being of accelerated students show such students to be happy and successful (see, for example, reviews by Rimm & Lovance, 1992; Robinson, 2004; van Tassel-Baska, 1986). When Sayler and Brookshire (1993) compared a large number of accelerated students with non-accelerated students who were either gifted or non-gifted, they found the accelerated students to be popular, have positive

self-concepts, and also have an internal locus of control. Levels of emotional adjustment and feelings of acceptance among the accelerated students were higher than those among the regular students and equal to those among the non-accelerated gifted students. Many teachers nevertheless express concerns about relatively young, accelerated students and the fear that social-emotional problems may inadvertently occur (Southern, Jones, & Fiscus, 1989; Townsend & Patrick, 1993).

*Gifted education and acceleration in the Netherlands*

Up until 1993 in the Netherlands, elementary schools were free to decide on the type of educational program to be offered, which resulted in major differences in the content of different subjects across schools. To attain greater educational unity, the Dutch government introduced so-called core standards (“*kerndoelen*”) that children must meet by the end of elementary school. Schools are still free to decide upon the type of program to be used to attain these standards and — according to the Ministry of Education, Culture, and Science (2006) — have sufficient possibilities to implement their own, specific educational program and still reach the prescribed standards. This organizational freedom also enables schools to offer or not offer special educational programs for gifted students.

Given that the educational system in the Netherlands is different from the educational system in the USA, positive results in North American acceleration studies are not necessarily applicable to the Dutch educational situation. At the age of four years, Dutch children can enter a combined preschool/kindergarten program which lasts a total of two years, is obligatory from the age of five years, and is part of the more general elementary school program that spans an additional six years. Early elementary school entrance and acceleration during the elementary school years are both allowed and practiced in the Netherlands (Mönks & Pflüger, 2005). When Dutch children progress through elementary school without acceleration or repetition of a grade, they are thus prepared to enter secondary school at typically 12 years of age. Students can then choose from different levels of secondary education that vary in not only content but also the duration of the



education (i.e., entails 4, 5, or 6 years of high school). (For more detailed information, see the website of the Dutch Ministry of Education, [www.minocw.nl/english/education/index.html](http://www.minocw.nl/english/education/index.html).)

In the Netherlands and other European countries, grade-based acceleration is the most common educational arrangement for gifted students (Mönks & Pflüger, 2005). There is, however, no official information on how many students in the Netherlands have been accelerated. Information from the organization entitled Statistics Netherlands (CBS, 2006) shows 1% of all students in the first grade of high school to be 11 years or younger, which indicates that they accelerated in elementary school. Information from the Cito Institute for Test Development shows almost 4% of students completing the final grade of elementary school ( $n = 144,274$ ) to have gone through elementary school more rapidly than usual (Cito Groep, 2006).

Although acceleration is clearly used in Dutch schools, both teachers and parents appear to feel uncomfortable with the measure and frequently express worries about the future social-emotional well-being of the accelerant (Hoogeveen, 2000). As a female biology teacher in the Netherlands puts it: “In elementary school, teachers should stimulate the student without acceleration. But how can they offer the necessary social-emotional support and protection when they accelerate the program?”

### **The present research**

#### *Aims*

In the present research, the social-emotional effects of acceleration for gifted students were quantified and analyzed. Of particular interest were those forms of acceleration that result in students being younger than their classmates or — in other words — such grade-based acceleration as grade skipping, early school entrance, or telescoping of the curriculum.

A multidimensional, dynamic vision of giftedness was adopted. That is, the performance of gifted students was assumed to depend upon not only their intellectual capacities but also the intrapersonal characteristics and environments of the students. For this reason, not only the programs that the students were enrolled in but also the intrapersonal characteristics and environments of the students were examined in relation to the social-emotional characteristics of the students.

The social-emotional effects of acceleration were of particular interest because most of the worries related to acceleration concern the children's social development. It is assumed that the social-emotional characteristics of the students are indeed influenced by the educational program that is offered and that the social-emotional characteristics of students can thus indicate — at least in part — the efficacy of a particular educational program for gifted students.

Acceleration is the most frequently used arrangement for gifted education in the Netherlands and elsewhere but certainly not the only one. Before describing the effects of academic acceleration, thus, we will therefore first consider the broader range of educational programs for gifted students and attempt to answer the following question (see Chapter 2):

- (1) How do the different types of educational programs for gifted students across the world appear to affect their social-emotional development and cognitive performance of students?

In subsequent chapters, we will specifically focus on academic acceleration in the Netherlands and examine the following questions.

- (2) What are the experiences of Dutch high school teachers with accelerated students, what are the attitudes of Dutch teachers towards acceleration, and to what extent are the attitudes of Dutch teacher open to change?
- (3) What are the effects of acceleration during elementary school on the development of the self-concepts and social status of such students during high school and how do such accelerated students compare to non-accelerated students in high school?

- (4) What are the effects of academic acceleration on the social-emotional characteristics of gifted students when compared to non-accelerated gifted students?

*Outline of the present thesis*

In Chapter 2, the first question is addressed. The results of an international review on the effects of different types of educational programs for gifted students (i.e., Acceleration, Within Class Enrichment, Pull-out Programs, Summer Programs, Gifted Classes, and Gifted Schools) are reported on. The aim of the review was to attain a set of evidence-based statements regarding the effectiveness of different educational programs for gifted students.

In the chapters thereafter, extensive information is presented on the situation of accelerated students within the Dutch educational system. For this purpose, data were collected from the accelerants themselves but also teachers, parents, classmates, and gifted but non-accelerated peers.

In Chapter 3, the second research question is addressed. The experiences of Dutch high school teachers with accelerated students and the attitudes of Dutch teachers towards acceleration and accelerated students are examined. We assumed characteristics of the teachers to mediate their attitudes and therefore included such characteristics as gender and age in the analyses. We also expected intervention, which was the provision of specific information about giftedness and acceleration within the present context, to mediate the attitudes of teachers towards acceleration. High school teachers were studied in particular because these teachers are confronted with accelerated and thus younger students without having been involved in the decision to accelerate the students.

In Chapter 4, the third research question is addressed. The self-concepts and social status of accelerated students and their classmates during the first and second years of Dutch high school are examined. The question of just how well accelerants fit in with their older classmates is addressed in particular. The

longitudinal design of the study provides insight into the social and emotional consequences of acceleration across an extended period of time.

In Chapter 5, the fourth research question is addressed. The self-concepts and social contacts of children, adolescents, and young adults who have all been identified as gifted are examined. To get the broadest view possible of the functioning of the participants, we also involved parents in this study and asked them to evaluate the behavior of their gifted child with attention the child's social-emotional adjustment and learning attitudes as well. Accelerated gifted students were compared to non-accelerated *gifted* students in order to gain a very clear view of how acceleration affects the social-emotional characteristics and academic performance of gifted students. Just as in Chapter 4, the self-concepts of the students were also examined. In addition, we asked the students to keep a diary in order to investigate how much social contact they had and with whom. Parents were asked to evaluate their child's behavior and the child's social-emotional adjustment and learning attitudes in particular. Based upon the outcomes of earlier research, we expected accelerated gifted students to show similar or more positive results with respect to self-concept, social contacts, social-emotional adjustment, and learning attitudes when compared to non-accelerated gifted students.

In Chapter 6, the results of the four studies are combined to draw some final conclusions with regard to the effects of academic acceleration. In addition, some evidence-based recommendations regarding gifted education in general and academic acceleration in particular are provided.

## EFFECTS OF EDUCATIONAL PROGRAMS FOR GIFTED STUDENTS. A RESEARCH REVIEW.\*

*The results of an international review of investigations into the effects of educational programs for gifted students are reported in this study. Out of hundreds of publications that appeared between 1993 and 2003, 62 experimental studies were initially selected for consideration. Of these, 23 studies met the methodological criteria for inclusion in the review. The studies evaluated the effects of different types of educational programs for gifted students, including Within-class Enrichment, Pull-out Programs, Summer Programs, Acceleration, Gifted Classes, and Gifted Schools. The results show the conditions for successful educational programs for gifted students to be complex and multidimensional. The programs positively affect the academic performance of the gifted students. Both positive and negative effects on the social-emotional characteristics of the students, including their self-concepts, were found. The varying effects of the gifted programs on the academic and nonacademic self-concepts of the students can be explained in part by the initial occurrence of the “BIG-FISH-LITTLE-POND” phenomenon and later establishment of a more realistic self-concept after participation in certain programs. It is concluded that more systematic research taking the*

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*multidimensionality of the conditions for successful educational programs for gifted children into consideration is needed.*

## **Introduction**

Standard educational curricula are developed for average students and typically offer insufficient challenges for gifted students. Gifted students enrolled in a standard educational curriculum may develop a variety of problems, that can range from boredom to serious behavioral or emotional problems. That is, gifted students may clearly need an adjusted educational program at times. Moon and Rosselli (2000) define a program for gifted students as “an educational experience that is planned and implemented in a specific location or region for the purpose of enhancing the development of identified gifted and talented students” (p. 499). However, as noted by Moon and Rosselli, many educational programs for gifted students are the result of advocacy: Someone, often a parent or a teacher, observes a problem (e.g., highly intelligent students that do not show the expected performance) and calls for action. This has resulted in a variety of educational programs for gifted children, but the question of whether these programs are truly effective still remains to be answered for parents, students, and school professionals. Most of the research on the effectiveness of educational arrangements for gifted students to date is also of a qualitative or descriptive nature (cf. Awaya, 2001; Enersen, 1993; Lim, 1996; Mooij, 1999). In the present study, the focus is therefore on quantitative studies of educational programs for gifted students with clearly measurable outcomes.

Educational programs for gifted students can be classified into two types: acceleration or enrichment. Acceleration entails students going through the traditional educational system but at a faster pace by skipping a grade, grade telescoping (i.e., compression of the curriculum), and/or early college admission — for example (Gallagher, 2003; Southern, Jones, & Stanley, 1993). Acceleration is based upon a top-down or so-called “design-down” model for the presentation of the full elementary or high school curriculum aimed at preparation of the student for subsequent education but then shortened as a result of acceleration of the educational process. Enrichment programs offer gifted students additional educational experiences and are aimed at providing a more challenging and

enriched learning environment (Gallagher, 2003; Moon & Feldhusen, 1995; Rudnitski, 1995; Southern et al., 1993). Enrichment is usually based upon a broad conceptualization of giftedness that acknowledges creativity, motivation, and independence as also crucial factors in the development of giftedness (van Tassel-Baska, 2000).

Various forms of enrichment programs exist for gifted education. Within the context of the present study, we distinguish five forms of enrichment: (1) within-class enrichment, which involves the offering of additional educational experiences either in small groups or individually but within the classroom; (2) pull-out programs, which have students spend most of their time in the regular classroom but also time that can range from a few hours to a few days in a special group with other gifted students to receive a more challenging program aimed at the specific academic needs of gifted students; (3) summer programs, which are aimed at the enhancement of cognitive, motivational, and social experiences of students during the summer break; (4) gifted classes, which have students placed in the same classroom with other gifted students and therefore limit contact with non-gifted students to possibly only specific classes such as music or physical education; and (5) gifted schools, which provide a full-time educational program that is faster and more challenging than the regular educational program.

One of the fundamental aspects of a program for gifted students is obviously the theory of giftedness on which the program is based. The underlying theory of giftedness has implications for all aspects of program development including program philosophy and aims, selection of participants for the program, and instructional methods. The definition of giftedness is the cornerstone of the program for gifted children (Feldhusen & Jarwan, 2000; Moon & Rosselli, 2000). If — for example — giftedness is construed as mostly innate, efforts will be made to adapt the program as much as possible to the abilities of the individual, which requires that the abilities of the individual student be made as clear as possible for provision of the most adequate curriculum. When giftedness is construed as more of



a result of effort, greater attention will be concentrated on the qualifications and abilities of the educators and the diligence of students (Moon & Rosselli, 2000).

In the research literature, different conceptions of giftedness exist with different combinations of factors mentioned as conditions for giftedness. Most models mention intelligence as an important factor (Feldhusen & Jarwan, 2000). Apart from intelligence, however, almost all of the models also mention various social-emotional and environmental factors as conditions for the manifestation of gifted behavior. In the present study, we treat giftedness as a dynamic multidimensional concept that thus entails multiple factors and clearly encompasses social-emotional and environmental factors.

In keeping with this multidimensional approach to giftedness, an educational program for gifted students constitutes an environmental factor that is aimed at helping the student with high abilities perform consistent with his or her abilities (Heller, 1991). There are obviously other environmental factors that can influence the performance of gifted students, such as characteristics of the school in general or the family of the student (see, for example, Albert, 1995; Freeman, 2000; Mooij, 1992; Perleth, Schatz, & Mönks, 2000). In the present study, however, the focus is on the specific school factor of “educational program.”

Furthermore, the performance of students can be classified into various domains. Cognitive domains include academic performance in the areas of math, language, and science. Social-emotional domains include social competence, interpersonal abilities, and the presence or absence of behavioral problems. Other performance domains are, for example, the arts and sports. In the present study, the focus is on the *cognitive* and *social domains of performance*.

*Cognitive performance* can be subdivided into expressed *intellectual capacities*, *creativity*, and *school performance* (general performance, mathematics, language, computer, science, social science, and information processing). High intellectual and creative abilities are part of many definitions of giftedness, but highly intelligent students are not always able to give sufficient expression to these abilities. Students identified as gifted may not always attain high grades as a

consequence of insufficient support from the surrounding environment and/or social-emotional factors (Gallagher, 2003; Rimm & Lovance, 1992; Peters, Grager-Loidl, & Supplee, 2000). An adjusted educational program can thus help to make the environment more supportive and address critical social-emotional factors, which may then lead to better cognitive performance on the part of the relevant students.

The definitions of *social performance* vary greatly. Most of the definitions concern the frequency and quality of social interaction (Dodge, 1985). Some of the definitions include all behaviors and traits associated with peer acceptance and/or adequate functioning in social situations (Greenspan, 1981). In the present study, *social competence* and *behavioral adjustment* are distinguished. In the studies reviewed as part of the present study, social competence concerns communication, the social relations of the student (Cohen, Duncan, & Cohen, 1994; Cornell, Delcourt, Bland, Goldberg, & Oram, 1994), social participation, and social skills (Cornell et al., 1994; Noble, Robinson, & Gunderson, 1993; Chan, Cheung, Chan, Leung, & Leung, 2000).

With respect to behavioral adjustment, experts on giftedness have found gifted students to actually show less problematic social behavior than non-gifted students (Galloway & Porath, 1997; Neihart, Reis, Robinson, & Moon, 2002). Various intrapersonal and environmental factors can certainly affect the behavior of both the gifted and non-gifted students (Gagné, 2000; Heller, 1991). And gifted students, in particular, may face certain situations that place their social development considerably at risk (Reis & Renzulli, 2004). Reis and Renzulli mention being different due to advanced academic or perhaps social development, on the one hand, and psychological vulnerabilities that can lead to — for instance — underachievement or perfectionism, on the other hand. Most authors agree that an appropriate environment is essential for gifted children to realize their full potential, also in the social domain (Diezmann & Watters, 1997; Gross, 1992; Lovecky, 1995; Neihart et al., 2002; Subhi, 1999). Both Gross and Diezmann and Watters, for example, mention the case of gifted students whose behavioral

problems disappear following acceleration (see Gross) or placement in an enriched class (see Diezmann & Watters). A special program offered to enhance the math performance and creativity of gifted children was similarly found to promote their social interaction skills and peer acceptance (Subhi, 1999). Lovecky (1995) has shown, in contrast, how acceleration can lead to behavior problems involving the occurrence of age-inappropriate behavior. It is therefore important to know which program creates the appropriate environment to enhance social performance.

In addition to the cognitive and social domains of performance, gifted programs can also affect the *intrapersonal social-emotional characteristics* of students such as self-concept, emotional stability, motivation, and learning strategies, which may then — in turn — influence their cognitive and/or social performance.

*Self-concept* is an intrapersonal characteristic that describes how the individual feels about him/herself. Most scholars take the notion of self-concept to be multidimensional today and assume the underlying structure to be hierarchical (Harter, 1982; Marsh, 1990; Shavelson, Hubner, & Stanton, 1976). A distinction between academic self-concept and nonacademic or social self-concept is often made with the former concerned with school and the latter concerned with social relations and physical appearance (Marsh, Chessor, Craven, & Roche, 1995; Zeidner & Schleyer, 1998). One reason for making such a distinction stems from the observation that the academic self-concepts of gifted students have been found to often drop when they participate in a gifted program. Marsh (1987) refers to this phenomenon as the “BIG-FISH-LITTLE-POND EFFECT” (BFLPE), which explains the finding that placement of a highly gifted student in a class with non-gifted students often leads to a very positive academic self-concept on the part of the gifted students while placement in a class with all or mostly gifted students makes the gifted student no longer unique and can lead to a decline of academic self-concept. While some researchers have argued that “self-esteem” or “self-worth” are more than just an evaluative aspect of the broader notion of self-concept, their status as separate constructs has yet to be clarified and established (Byrne,

1996). In the present study, therefore, self-esteem and self-worthiness are simply assumed to reflect the self-concept of the individual.

*Emotional stability* is another intrapersonal characteristic that can affect the performance of students and gifted students in particular (Heller, 1991). Indications of emotional *instability* are risk-avoiding behavior (Noble et al., 1993; Delcourt, Loyd, Cornell, & Goldberg, 1994), judgment dependency, pleasing behavior (Delcourt et al., 1994), test anxiety, and submissiveness (Noble et al., 1993; Zeidner & Schleyer, 1998). Even stronger indications of emotional instability are schizophrenia or obsessive behavior (Cornell, Delcourt, Goldberg, & Bland, 1992), and such problems can obviously influence the functioning of both gifted and non-gifted students in interaction with other factors and thus to a greater or lesser extent.

Giftedness without *motivation* cannot lead to optimal performance. Although there are indications that gifted students are generally more motivated than their non-gifted peers (Gross, 2000), we also know that a stimulating and supportive environment is a prerequisite for motivation and its maintenance (Lens & Rand, 2000).

Various *learning strategies* are necessary to convert talent into performance. Not only planning and organization skills but also an ability to memorize and evaluate one's performance (Neber & Heller, 2002) are needed to learn, can thus affect student functioning, and are therefore important factors in the education of the gifted as well.

To conclude, an educational program for gifted students can be considered effective when it promotes not only the cognitive development of the student but also the development of the social and intrapersonal characteristics of the student. In other words, various cognitive, interpersonal, and social-emotional outcomes are indicative for the effectiveness of a gifted educational program.

#### *The evaluation of educational programs for gifted students*

In 1991, Vaughn, Feldhusen, and Asher conducted a meta-analysis on the results of 30 years of research on one particular type of gifted education program, namely

pull-out programs. Small to medium positive effects on academic performance and both critical and creative thinking were found with no effect on self-concept. These results led the authors to conclude that pull-out programs are a viable option for the education of at least some gifted students. Similarly, when Kulik (1993) reviewed the results of two meta-analyses for five types of ability grouping programs described in articles from 1987, 1990, and 1991, the conclusion was that grouping programs that provided gifted students with education either inside or outside their regular classroom but adapted to their ability level produced higher scores on cognitive tests but only small effects on student self-esteem. Somewhat later, Renzulli and Reis (1994) and Olszewski Kubilius (1995) published descriptive research reviews on the Schoolwide Enrichment Model and early college entrance programs, respectively. Positive effects were found in both the cognitive and social-emotional domains for gifted students. Renzulli and Reis (1994) also found the Schoolwide Enrichment Model to be effective for gifted students across a variety of educational settings and also in schools where diverse ethnic and socioeconomic populations are served. Olszewski Kubilius (1995) further noted in their review that students who entered college early continued to achieve at high levels during college, adjusted well socially, and often went on to graduate school. Since 1995, more than 200 evaluations of gifted programs have been reported in the literature, which means that a new review is certainly called for.

*Purpose of the present study*

The purpose of the present study was to review and evaluate more recent studies of the different types of educational programs used with gifted students (i.e., acceleration, within-class enrichment, pull-out programs, summer programs, gifted classes, and gifted schools). We analyzed the effects of educational programs for gifted students in studies that complied a priori with our methodological criteria. We specifically examined the effects of the programs on the cognitive performance, social performance, and social-emotional characteristics of gifted students in order

to formulate a set of evidence-based statements regarding the effectiveness of different educational programs for gifted students.

## **Method**

### *Literature search*

Three methods were used to find research reports relevant for this study: (1) a search of publications between 1993-2003 using the ERIC, PsychINFO, and PiCarta electronic databases; (2) a check of references listed in the research reports retrieved in (1) above with the constraint that the reference had to be dated between 1993 and 2003; and (3) consultation of experts on giftedness in the Netherlands, the United States of America, Germany, United Kingdom, Hungary, Spain, Peru and Chili for reports not found using methods (1) and (2) (e.g., unpublished research reports). This search yielded over 200 articles, which included 62 experimental studies.

The 62 experimental studies were next inspected using the following criteria for inclusion in the present study: (1) participants are gifted students; (2) results included quantitative (i.e., clearly measurable) outcomes for cognitive and/or social-emotional functioning; (3) the research design was solid, which meant that only studies with independent-groups pretest-posttest, independent-groups posttest, or single group pretest-posttest designs were included; those studies of a questionable or unclear methodological quality were simply not included; and (4) the research report had to be written in a language that the authors of the present paper could read: English, German, Spanish, Dutch, or French.

In the end, a total of 23 studies met the inclusion criteria. In 14 of the 23 studies, the participants were between 6 and 12 years of age (i.e., still in elementary school). In 6 of the studies, the participants were between 13 and 17 years of age (i.e., in high school ). And in 3 of the studies, the participants were university students.

The following gifted programs were evaluated in the selected studies: two Acceleration Programs, five Within-class Enrichment Programs, five Pull-out Programs, two Summer Programs, seven Gifted Classes, two Gifted Schools, one Enrichment Program in combination with Teacher Training, and the effects of Teacher Training alone were evaluated in one study. In four of the studies, the type of program or programs being offered was simply not specified (see Table 2.1).

### *Study characteristics*

For each of the 23 selected studies, the total sample size and sample sizes for the experimental and control groups were recorded. A total of 162 variables that could be classified as cognitive performance, social performance, or social-emotional characteristics (see Table 2.1) were identified as dependent variables. The relevant means, standard deviations, or percentages — depending on what was reported in the study — were recorded along with the type of statistical analyses used (e.g., t-test, F-test, Chi Square) and any effect sizes. We also recorded the mean age of the participant group, ethnic background information, and gender information. Finally, the design of the study (i.e., independent-groups pretest-posttest, independent-groups posttest, or single group pretest-posttest designs) and definition of giftedness used in the study were also recorded.

*Table 2.1: Domains of Cognitive Performance, Social Performance, and Social-emotional Characteristics*

Cognitive Performance	Social Performance	Social-emotional characteristics
Intellectual	Social competence	Self-concept
School	Behavioral adjustment	- Academic
- General		- Non-Academic
- Mathematics		- General
- Language		Motivation
- Computer		Emotional stability
- Science		Learning strategies
- Social science		
- Information processing		
Creativity		

*Data analyses*

Effect sizes were calculated for all of the studies. The unit of analysis was the individual study and not the individual participant, which meant that each effect size was weighted by the sample size in the study it originated from. This makes the contribution of each effect size to any statistical analysis proportional to its reliability (Lipsey & Wilson, 2001).

*Analysis procedure*

When average outcomes were reported in the original study, we calculated the standardized mean gain, which indicates the difference between the means divided by the pooled standard deviation. When percentages were reported, the percentage difference was calculated. These effect size statistics provide information on the magnitude of the quantitative research findings and thereby indicate the effectiveness of the gifted program. The rule of thumb for the interpretation of effect sizes is that an effect size of .20 or less is small, .50 is medium, and .80 or more is large (Lipsey & Wilson, 2001; Vaughn et al., 1991). A positive sign is assigned to the effect size when the treatment group or posttest measurement is “better” than the control group; a negative sign is assigned when the treatment group or posttest measurement is “worse” than the control group (Lipsey & Wilson, 2001). To include both the pretest and posttest data from a study with an independent-groups pretest-posttest design in the present analysis, an equivalent time-effect was necessary for the two groups (Morris & DeShon, 2002). The information provided in the studies was not sufficient to justify this assumption, so we decided to analyze the posttests data for the experimental and control groups without inclusion of the pretest data.

Finally, multivariate analyses were conducted to investigate the possible influences of the following factors: country in which the study took place, participant gender, participant ethnic origin, participant age, definition of giftedness, time between start of program and evaluation, and duration and intensity of program.



## Results

The 23 studies included in the analysis are marked with an asterisk (\*) in the reference list. As can be seen, some of the publications involved two or more specific studies. The effects of the gifted education programs on the cognitive performance, social performance, and social-emotional characteristics of the students are summarized below.

### *Effects on cognitive performance*

The effect sizes for the gifted education programs according to the relevant domains of cognitive performance are presented in Table 2.2.

*Table 2.2: Effect Sizes for Gifted Education Programs in Different Domains of Cognitive Performance*

Study (year)	Program	Effect size
<b>Intellectual abilities</b>		
Álvarez Gonzalez (2002)	Within-class enrichment	.23
Chan, Cheung, Chan, Leung, & Leung (2000)	Summer program	.48
Balogh, Dávid, Nay, & Toth (2001)	Gifted class	.10
Grayson (2001)	Non-specified gifted program	.29
<b>Creativity</b>		
Noble, Robinson, & Gunderson, (1993)	Acceleration	-.19
Cornell, Delcourt, Goldberg, & Bland (1992)	Within-class enrichment	-.08
Cornell, Delcourt, Goldberg, & Bland (1992)	Pull-out program	-.44
Pýchová (1995)	Gifted class	.36
Cornell, Delcourt, Goldberg, & Bland (1992)	Gifted class	-.30

Effects of educational programs for gifted students

School performance		
General		
Barnett & Durden (1993)	Acceleration	.00
Noble, Robinson, & Gunderson (1993)	Acceleration	.04
Zeidner & Schleyer (1998)	Gifted class	-.80
Mathematics		
Cornell, Delcourt, Goldberg, & Bland (1992)	Within-class enrichment	.46
Delcourt, Loyd, Cornell, & Goldberg (1994)	Within-class enrichment	.10
Cornell, Delcourt, Goldberg, & Bland (1992)	Pull-out program	.83
Delcourt, Loyd, Cornell, & Goldberg (1994)	Pull-out program	1.07
Cornell, Delcourt, Goldberg, & Bland (1992)	Gifted class	.58
Delcourt, Loyd, Cornell, & Goldberg (1994)	Gifted class	.95
	Gifted school	.33
Reis, Westberg, Kulikowic & Purcell (1998)	Teacher training	-.09
Language		
Cardona Moltó (2002)	Within-class enrichment	-.08
Cornell, Delcourt, Goldberg, & Bland (1992)	Within-class enrichment	.48
Delcourt, Loyd, Cornell, & Goldberg (1994)	Within-class enrichment	.39
Cornell, Delcourt, Goldberg, & Bland (1992)	Pull-out program	.41
Delcourt, Loyd, Cornell, & Goldberg (1994)	Pull-out program	1.39
Cornell, Delcourt, Goldberg, & Bland (1992)	Gifted class	.50
Delcourt, Loyd, Cornell, & Goldberg (1994)	Gifted class	1.17
	Gifted school	1.19
Reis, Westberg, Kulikowich, and Purcell (1998)	Teacher training	-.09
Science		
Cornell, Delcourt, Goldberg, & Bland (1992)	Within-class enrichment	.74
Delcourt, Loyd, Cornell, and Goldberg (1994)	Within-class enrichment	.16
Dods (1997)	Within-class enrichment	1.48
Cornell, Delcourt, Goldberg, & Bland (1992)	Pull-out program	1.49
Delcourt, Loyd, Cornell, & Goldberg (1994)	Pull-out program	.92
Cornell, Delcourt, Goldberg, & Bland (1992)	Gifted class	.59

Effects of educational programs for gifted students

Delcourt, Loyd, Cornell, & Goldberg (1994)	Gifted class	.69
	Gifted school	.17
Reis, Westberg, Kulikowich, & Purcell (1998)	Teacher training	.04
Van Tassel-Baska, Bass, Ries, Poland, & Avery (1998)	Non-specified gifted program	1.30
Social science		
Cornell, Delcourt, Goldberg, & Bland (1992)	Within-class enrichment	.43
Delcourt, Loyd, Cornell, & Goldberg (1994)	Within-class enrichment	-.17
Cornell, Delcourt, Goldberg, & Bland (1992)	Pull-out program	.60
Delcourt, Loyd, Cornell, & Goldberg (1994)	Pull-out program	.64
Cornell, Delcourt, Goldberg, & Bland (1992)	Gifted class	.56
Delcourt, Loyd, Cornell, & Goldberg (1994)	Gifted class	.87
	Gifted school	.08
Reis, Westberg, Kulikowich, & Purcell (1998)	Teacher training	-.03
Information processing		
Freeman & Josepsson (2002)	Pull-out program	.15
Balogh, Dávid, Nay, & Toth (2001)	Gifted class	.17
Landrum (2001)	Teacher training & enrichment	.70
Terrell (2002)	Non-specified gifted program	1.23

In four studies, the *intellectual abilities* of gifted students after participation in one of the following gifted programs were evaluated: a within-class enrichment program (Alvarez Gonzalez, 2002), a summer program (Chan et al., 2000), a gifted class (Balogh et al., 2001), and a non-specified gifted program (Grayson, 2001). Positive effects were found in all cases. The most positive effect, which was moderate, was found for the summer program.

The effect sizes for *creativity* varied from a medium negative effect for a pull-out program (Cornell et al., 1992) to a medium positive effect for a gifted class (Pýchová, 1995).

Similarly, the effect sizes for school performance varied from a large negative effect for a gifted class on *general school performance* (Zeidner & Schleyer, 1998) to large positive effects for two pull-out programs (Cornell et al., 1992, Delcourt et al., 1994), a gifted class, a gifted school (Delcourt et al., 1994), a within-class enrichment program (Dods, 1997), and two non-specified gifted programs (Terrell, 2002) on all *specific school subjects*. The acceleration programs and teacher training program were not found to significantly affect *general school performance* while the teacher training program combined with Enrichment yielded a medium positive effect on *information processing*. Pull-out programs clearly yielded the most positive effects on *mathematics* and *science* while gifted classes clearly yielded the most positive effects on *language*.

#### *Effects on social performance*

The effect sizes for the gifted education programs according to the relevant domains of social performance are presented in Table 2.3.

*Table 2.3: Effect Sizes for Gifted Education Programs in Different Domains Social Performance*

Social competence		
Study (year)	Program	Effect size
Noble, Robinson, & Gunderson (1993)	Acceleration	-.06
Cohen, Duncan, & Cohen (1994)	Pull-out program	.14
Chan, Cheung, Chan, Leung, & Leung (2000)	Summer program	.29
Cornell, Delcourt, Bland, Goldberg & Oram (1994)	Non-specified gifted program	-.06

Behavioral adjustment		
Noble, Robinson, & Gunderson (1993)	Acceleration	.15
Cohen, Duncan, & Cohen (1994)	Pull-out program	.34
Cornell, Delcourt, Bland, Goldberg, & Oram (1994)	Non-specified gifted program	-.09

*Effects on social-emotional characteristics*

In Table 2.4, an overview of the effects of the different gifted programs on various social-emotional characteristics are presented.

Inspection of the results in Table 2.4 shows all of the educational programs studied to have negative effects on *academic self-concept*. Particularly large negative effects were found for the gifted classes studied by Delcourt et al. (1994) and Zeidner and Schleyer (1998) while the other effects were small to medium but all negative.

*Table 2.4: Effect Sizes for Different Gifted Education Programs on Social-emotional Characteristics*

Study (year)	Program	Effect-size
Academic Self-concept		
Cornell, Delcourt, Goldberg & Bland (1992)	Within-class enrichment	-.55
Delcourt, Loyd, Cornell, & Goldberg (1994)	Within-class enrichment	-.24
Cornell, Delcourt, Goldberg & Bland (1992)	Pull-out program	-.51
Delcourt, Loyd, Cornell, & Goldberg (1994)	Pull-out program	-.10
Marsh, Chessor, Craven, & Roche (1995)	Gifted class	-.68
Zeidner & Schleyer (1998)	Gifted class	-1.17
Cornell, Delcourt, Goldberg, & Bland (1992)	Gifted class	-.46
Delcourt, Loyd, Cornell, & Goldberg (1994)	Gifted class	-.92

Effects of educational programs for gifted students

Wright & Leroux (1997)	Gifted class	-.30
Cornell, Delcourt, Goldberg, & Bland (1992)	Gifted school	-.61
Delcourt, Loyd, Cornell, & Goldberg (1994)	Gifted school	-.72
<hr/> Non-Academic Self-concept <hr/>		
Cornell, Delcourt, Goldberg, & Bland (1992)	Within-class enrichment	-.21
Delcourt, Loyd, Cornell, & Goldberg (1994)	Within-class enrichment	-.81
Cornell, Delcourt, Goldberg, & Bland (1992)	Pull-out program	-.14
Delcourt, Loyd, Cornell, & Goldberg (1994)	Pull-out program	-.80
Marsh, Chessor, Craven & Roche (1995)	Gifted class	-.06
Zeidner & Schleyer (1998)	Gifted class	-.08
Cornell, Delcourt, Goldberg, & Bland (1992)	Gifted class	-.15
Delcourt, Loyd, Cornell, & Goldberg (1994)	Gifted class	-1.11
Wright & Leroux (1997)	Gifted class	.28
Cornell, Delcourt, Goldberg, & Bland (1992)	Gifted school	-.03
<hr/> General Self-concept <hr/>		
Noble, Robinson, & Gunderson (1993)	Acceleration	-.24
Cornell, Delcourt, Goldberg, & Bland (1992)	Within-class enrichment	-.31
	Pull-out program	.00
	Gifted class	-.20
Wright & Leroux (1997)	Gifted class	-.03
Cornell, Delcourt, Goldberg, & Bland (1992)	Gifted school	-.10
<hr/> Emotional stability <hr/>		
Noble, Robinson, & Gunderson (1993)	Acceleration	-.25
Delcourt, Loyd, Cornell, & Goldberg (1994)	Within-class enrichment	-.11
	Pull-out program	.12
Freeman & Josepsson (2002)	Pull-out program	.24
Zeidner & Schleyer (1998)	Gifted class	-.66
Delcourt, Loyd, Cornell, & Goldberg (1994)	Gifted class	-.29
	Gifted school	-.20
Cornell, Delcourt, Bland, Goldberg, & Oram (1994)	Non-specified gifted program	-.11
<hr/> Motivation <hr/>		
Noble, Robinson, & Gunderson (1993)	Acceleration	-.14

Effects of educational programs for gifted students

Cornell, Delcourt, Goldberg, & Bland (1992)	Within-class enrichment	.03
Delcourt, Loyd, Cornell, & Goldberg (1994)	Within-class enrichment	-.15
Cornell, Delcourt, Goldberg, & Bland (1992)	Pull-out program	-.37
Delcourt, Loyd, Cornell, & Goldberg (1994)	Pull-out program	.22
Neber & Heller (2000)	Summer program	.34
<hr/>		
Delcourt, Loyd, Cornell, & Goldberg (1994)	Gifted class	-.23
Cornell, Delcourt, Goldberg, & Bland (1992)	Gifted class	-.42
	Gifted school	.05
Delcourt, Loyd, Cornell, & Goldberg (1994)	Gifted school	-.08
<hr/>		
Learning Strategies		
<hr/>		
Cornell, Delcourt, Goldberg, & Bland (1992)	Within-class enrichment	-.03
Cornell, Delcourt, Goldberg, & Bland (1992)	Pull-out program	-.33
Neber & Heller (2000)	Summer program	.25
Cornell, Delcourt, Goldberg, & Bland (1992)	Gifted class	-.39
Cornell, Delcourt, Goldberg, & Bland (1992)	Gifted school	-.40
Grayson (2001)	Non-specified gifted program	.04
<hr/>		

Similarly, with the exception of the gifted class studied by Wright and Leroux (1997), all of the educational programs exerted a negative effect on *non-academic self-concept*. Large negative effects were found for not only the Within-class enrichment program and Pull-out program but also the gifted class, which were all studied by Delcourt et al. (1994).

Only small but all negative effects of the programs studied were found for *general self-concept*, with the exception of a pull-out program that did not have an effect (Cornel et al., 1992).

The effects of the programs on the *emotional stability* of the participants varied from positive to negative but were all small.

*Other factors of influence*

Country

Of the 29 investigated educational programs, 20 were conducted in the USA. We therefore decided against the inclusion of “country” as a variable in the analyses.

Gender

The gender of the participants was considered in only three studies (Cornell et al., 1994; Wright & Leroux, 1997; Zeidner & Schleyer, 1998). Zeidner and Schleyer found the gifted class that they studied to have a medium to large negative effect on both girls (-.84) and boys (-.78). The non-specified gifted program studied by Cornell et al. negatively affected the *social competence* and *behavioral adjustment* of boys to a slight extent (-.16 and -.18, respectively) but not the social competence or behavioral adjustment of girls (-.01 and -.07, respectively).

Zeidner and Schleyer found large negative effects of a gifted class on the *academic self-concept* of both girls (-1.26) and boys (-1.08). Wright and Leroux also found negative effects of a gifted class on this part but also a difference between boys (-.45: medium effect) and girls (-.15: small effect).

Zeidner and Schleyer found a small negative effect (-.21) of a gifted class on the *non-academic self-concept* of girls but a non-significant effect on boys (.06). Wright and Leroux found a small positive effect of a gifted class on the *non-academic self-concept* of both girls (.31) and boys (.26) but a large negative effect on *general self-concept* for both girls (-.84) and boys (-.78). Finally, Cornell et al. found small but negative effects of a non-specified gifted program on the *emotional stability* of both girls (-.16) and boys (-.13).

Ethnic origin

About half of the studies explicitly mentioned the ethnic origin of the participants. This was predominantly Caucasian, so it was therefore decided not to include this variable in the analyses.



Age

When the overall effect sizes for the educational programs are examined according to the age of the participants, the largest — positive — effects are found for the oldest students (i.e., those students over the age of 14 years) (.39). Only a small overall effect (.16) is found for the six-year-old students while the overall effects for ages 7 to 14 years are negligible (<.10). It should be noted, however, that these findings do not present a reliable picture as there was little differentiation of the results according to age in the studies examining acceleration, within-class enrichment, pull-out programs, summer programs, and/or gifted schools.

Differences depending on age were found in the studies of gifted classes (Balogh et al., 2001; Cornell et al., 1992; Delcourt et al., 1994; Marsh et al., 1995; Pýchová, 1995; Wright & Leroux, 1997; Zeidner & Schleyer, 1998). The effects of a gifted class were most positive for students 14 years or older (.36). Smaller positive effects (.14 and .17) were found for 13-year olds; a medium negative effect for 9- and 10-year olds (-.61); and no significant effect for 7- and 8-year olds (<.10).

When the age results are further differentiated according to type of outcome, the effects on the *general school performance* of 7-, 10-, and 11-year-old gifted students are found to be negative and larger for the 10- and 11-year olds (-.81) than for the 7-year olds (-.39).

The effects of Gifted Class on the *creativity* of the gifted students were moderately positive for 10- and 11-year olds (.36) but moderately negative for 7-year olds (-.39).

*Academic self-concept* was negatively affected (-.30 to -.17) at all ages. The effects were large for the 10- and 11-year olds (-1.17), medium for the 7-year olds (-.46), and small for 13-year olds (-.30).

The effect of gifted classes on the *non-academic self-concept* of the gifted students was positive for 13-year olds (.28), non-significant for 10- and 11-year olds, slightly negative for 7-year olds (-.15), and very negative (-1.11) for 8-year olds.

### Definition of Giftedness

Unfortunately, too few of the studies provided a definition of “giftedness” or explicit information on the criteria used to select the students for inclusion in the gifted educational program or programs being studied. For this reason, it was not possible to differentiate the results according to the definition of giftedness used.

The variables “time between start of the program and evaluation,” “duration,” and “intensity of the program” were also not mentioned or sufficiently differentiated for inclusion in the present analyses.

### **Conclusions**

The findings of this research review show special programs for gifted students to be effective but different programs to have different effects depending on the domain of functioning being considered (i.e., cognitive performance, social performance, social-emotional characteristics of the students). Mostly positive effects were found for cognitive performance; both positive and negative effects for social performance; and more negative than positive effects for the social-emotional characteristics of self-concept, emotional stability, motivation, and learning strategies.

When the conclusions for those domains studied in relation to the same type of program in two or more studies are considered, the *school performance* of gifted students participating in a special program is found to be better than that of gifted students not participating in a special program. Within-class enrichment programs showed less positive effects for *school performance* than pull-out programs, which showed the most positive effects. The *academic self-concept* of participants in a special program was found to be more negative than that of nonparticipants. The most negative effects on *academic self-concept* were found for gifted classes while the least negative effects were found for pull-out programs. The *non-academic self-concept* of the participants in gifted programs was also negatively affected although less strongly than *academic self-concept*. Differences between the programs were apparent with the most negative effects on *non-*

*academic self-concept* found for within-class enrichment programs and the least negative effects on *non-academic self-concept* found for gifted classes.

### **Discussion**

The aim of the present study was to gain insight into the effectiveness of different educational programs for gifted students. In the literature on programs for gifted children, the positive effects on gifted children's cognitive performance and well-being are repeatedly emphasized. Such claims are often based on descriptive qualitative research, however, in which students or teachers are simply asked about their experiences with a particular program.

In the present research, only studies with a solid research design were selected for inclusion in the analysis. Effect sizes were calculated in order to attain clearly quantitative results and thereby facilitate comparison across interventions and participant populations. In general, the gifted programs were found to have a positive effect on the cognitive performance of students. Both positive and negative effects of the gifted programs were found for the social-emotional characteristics of the students.

The significance and implications for some of the positive and negative effects are difficult to determine. For cognitive performance, little discussion is necessary. A more positive result is better, which means that the positive effects of the gifted programs on cognitive performance show the programs to have the effect that they aimed for. In almost all of the studies, however, the self-concept of the gifted students who participated in a gifted program was found to be less positive than the self-concept of gifted students who did not participate in a gifted program (Cornell et al., 1992; Delcourt et al., 1994; Marsh et al., 1995; Zeidner & Schleyer, 1998). This clearly suggests a decline of self-concept as a result of participation in a gifted program. Such a decline was expected and can be explained in terms of the disappearance of the "BIG-FISH-LITTLE-POND" phenomenon mentioned earlier. That is, an observed decline in self-concept should be viewed as negative only when the more negative self-concept is unrealistic. When a gifted student has an overly

positive and unrealistic self-concept to start with (i.e., trumped up ego prior to participation in a gifted program), a more balanced and thus realistic self-concept may result from participation in a gifted program (i.e., grouping with other gifted students). And such an outcome can clearly be considered positive.

Marsh et al. (1995), Zeidner and Schleyer (1998), Cornell et al. (1992), and Delcourt et al. (1994) all distinguished between academic and non-academic self-concept in their studies. Marsh et al. showed that although *academic self-concept* declined following participation in a gifted class, no decline in *non-academic self-concept* was detected. Likewise, Zeidner and Schleyer (1998) and Cornell et al. found large negative effects for *academic self-concept* but much smaller negative effects for *non-academic self-concept*. Nevertheless, Delcourt et al. found a decline of both *academic* and *non-academic self-concept* after participation in a gifted class and/or a gifted school. For pull-out and within-class enrichment programs, in contrast, the effects on *academic self-concept* were found to be small while the effects on *non-academic self-concept* were found to be large. It thus seems that gifted classes and gifted schools may lead to declines in *academic self-concept* but not affect *non-academic self-concept* while Pull-out programs and Within-class enrichment programs may lead to declines in *non-academic self-concept* but not *academic self-concept* — or at least not the same degree of decline as for *non-academic self-concept*.

One possible explanation for the less negative effects of the pull-out programs and Within-class enrichment programs on *academic self-concept* may lie in the fact that students in gifted classes and gifted schools can only compare themselves to other gifted students whereas students in the other two programs can also compare themselves to non-gifted classmates. The combination of being part of a regular class and participation in a special program can nevertheless exert a negative effect on the *non-academic self-concept* of a gifted student at times. The variability in the data and limited number of studies available for inclusion in the present analysis thus call for more specific research in this area.

In light of the finding that gifted programs can affect not only the cognitive performance of students but also their social performance and self-concept, Delcourt et al. (1994) have emphasized that educators should be trained to provide an adequate level of education but also take the development of a student's self-concept clearly into consideration. Parents can play a role in this by teaching children to compare their own performances less to those of others and more to their own efforts and future plans (Delcourt et al., 1994). Marsh et al. (1995) have argued that education should be more individual-oriented than competition-oriented and that students should thus be encouraged to base their self-concept on development of their own abilities over time. Álvarez (2002) has similarly called for a more individual-oriented approach after observing students in mixed classes to hold back on their achievement in order not to stand out in comparison to classmates.

We hypothesized that the effects of gifted programs would be mediated by such learner variables as gender and age, on the one hand, and such program variables as the definition of giftedness used, duration of the program, and intensity of the program, on the other hand. The results showed gender and age to indeed play a role in the effects of various gifted programs. Unfortunately, many of the studies meeting the criteria for inclusion in the present analysis did not report on the model or theory of giftedness underlying the program of use, the duration of the program, the intensity of the program, teacher qualifications, the procedures used to identify giftedness, or the gender and socio-economic backgrounds of the participants. Firm conclusions regarding how such potentially important factors may mediate the efficacy of different gifted educational programs cannot, thus, be drawn as yet. We also think, moreover, that adequate interpretation of the roles of various student and educational factors requires the adoption of a more comprehensive multivariate theoretical and methodological approach in which different learner and environmental factors such as home and school factors can freely interact (cf. models of Mooij, 1992).

Family is an important environmental factor that can explain at least in part the performance of gifted students (Albert, 1995; Freeman, 2000; Perleth, et al.,

2000). The family selects and creates possibilities and experiences for children (Perleth et al., 2000). Socio-economic background can certainly play a part in children's development (Freeman, 2000; Perleth et al., 2000), and not only religion and family structure (Perleth et al., 2000) but also such critical events as divorce or the death of a family member (Perleth et al.; Peters et al., 2000) and the moving of a family (Plucker & Yecke, 1999) can exert a major influence on development. The attitudes of parents towards learning appear to be important in addition to the balance between freedom and pressure, support, and time that parents spend with their children (Mönks et al., 2000; Perleth et al., 2000; Peters et al., 2000). On the basis of a research survey, Mönks et al. (2000) concluded that the influence of parents and family may be particularly great in the affective domain and thus the areas of self-concept, values, attitudes, motivation, interests, and involvement.

With regard to the school situation, a student's gifted abilities may remain hidden until a well-developed educational environment provides a catalyst for the realization of such abilities (e.g., Awaya, 2001; Gagné, 1993; Heller, 1991). The teacher can play an important role in this process (Baldwin, Vialle, & Clarke, 2000; Lim, 1996). Along these lines, Baldwin et al. (2000) have pointed out that "giftedness can exist in many guises" (p. 570) and that it is therefore important that teachers be trained to recognize giftedness and provide sufficient support and stimulation for the realization of these abilities. If the educational environment is for some reason unable to do this, gifted students can develop a variety of problems.

It is clear that one single gifted program cannot serve as a catalyst for all gifted students. Schools that offer only a single gifted program thus provide only a selected and possibly very limited group of students with an opportunity to realize their talents. Other students may not benefit sufficiently or optimally from such a program, and even those students who do benefit from a particular program may require a different approach later in their development or school careers. It is therefore important that every school and school cooperative offer a variety of programs and monitor which program appears to lead to the best cognitive and social performance for a student at a given point in time.

Many educators consider gifted education to be a necessity and not a luxury. Prior to the introduction of educational adaptations, however, it is still imperative that a well-informed and evidence-based idea of the effects of different programs be made available. Apart from studying the effects of specific programs, moreover, the specific social-emotional characteristics of students and roles of numerous environmental factors should also be taken into consideration.

In closing, the complex array of factors involved in the evaluation of gifted programs calls for a comprehensive, multidimensional, and dynamic theoretical perspective in which various learner and environmental factors are free to interact. Such a perspective has been adopted in a longitudinal study recently initiated in the Netherlands (Mooij, Hoogeveen, van Hell, & Verhoeven, 2006). And the aim of this longitudinal research is to answer the question of which gifted programs, as implemented in the Netherlands, are best for which students, under which conditions, and at what moments in their school careers to optimize both their cognitive and social-emotional development.





## TEACHER ATTITUDES TOWARD ACCELERATED STUDENTS<sup>\*</sup>

*In a survey study, we investigated teacher attitudes toward acceleration and accelerated students in the Netherlands. 334 Teachers from 31 secondary schools gave their opinion about gifted education and acceleration, and evaluated statements about accelerated students. Most teachers considered a special approach for gifted students advisable and acceleration a useful intervention. Teachers' opinions about accelerated students' social competence, school motivation and achievement, emotional problems and isolation were qualified by the quantity and quality of prior experience with accelerated students and by their opinion on acceleration in gifted education. In a subsequent intervention study, we examined whether specific information on acceleration and giftedness changes teachers' attitudes toward accelerated students. Teachers who attended the information meeting and received written information expressed more positive opinions about accelerated students' social competence and school achievement and motivation and less negative opinions about emotional problems after intervention. Implications for gifted child education are discussed.*

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### **Introduction**

Some students who enter secondary school are (much) younger than their classmates: They passed through primary school faster than the average student because they have been academically accelerated. Many teachers express their concerns about these relatively young, accelerated students, as is exemplified in the following statement of a Dutch language teacher of a secondary school in the Netherlands “*Other students do not accept him [an accelerated student], partly because they are jealous. He does not make his homework, forgets his books, still his grades are fine. His parents have given him the idea he is a miracle, but he is not socially competent, he does not understand criticism*”.

Teachers’ worries about unwanted effects of acceleration are not substantiated by empirical studies on the academic performance and social-emotional well being of accelerated students (see, e.g., reviews by Rimm & Lovance, 1992; VanTassel-Baska, 1986). Rather, numerous studies show that accelerated students are happy and successful. This discrepancy between students’ benefits of acceleration and teachers’ attitudes toward acceleration motivated the present study, in which we sought to explore which problems teachers expect and experience with accelerated students, and whether their attitude can be modulated by information on acceleration. Such a deeper insight into the teachers’ opinions and attitudes toward acceleration is valuable, because teachers have a profound influence on the social, emotional and cognitive functioning of students, including accelerated students.

#### *Academic acceleration*

Pressley (1949) defines acceleration as “progress through an educational program at rates faster, or at ages younger than conventional” (cited by Southern, Jones & Stanley, 1993, p. 387). A well-known form of acceleration is to skip a class. Rogers (2002) names various other forms of grade-based acceleration (like nongraded

classrooms, grade telescoping, early admission to college) and subject-based acceleration (like subject acceleration and advanced placement).

As long as acceleration has been used as an educational option, its potential virtues and drawbacks are disputed (Gallagher, 1993). The consensus in the literature points at favorable outcomes of acceleration. Generally speaking, accelerated students show neither academic (Sayler & Brookshire, 1993; Swiatek, 1993) nor social-emotional problems (Benbow, 1991; Vialle, Ashton, Carlton & Rankin, 1997). On the contrary, researchers report academic (Rimm & Lovance, 1992; Vialle et al., 1997) as well as social (Rimm & Lovance, 1992; Sayler & Brookshire, 1993) advantages of acceleration. For example, Sayler and Brookshire (1993) conclude that accelerated students display levels of emotional adjustment and feelings of acceptance by others that are higher than those of regular students, and are comparable to those of older students identified as gifted. Moreover, Gross observed that accelerated students have a higher self-esteem and are more motivated (Gross, 1992) than non-accelerated students. Van Tassel-Baska (1986), after reviewing the research literature on all forms of academic acceleration, argues that acceleration improves the motivation, confidence, and scholarship of gifted students, and that it prevents the development of habits of mental laziness. She also points out that acceleration allows for earlier completion of professional training, thereby reducing the cost of education.

#### *Teacher opinions about acceleration*

In spite of numerous studies showing benefits of academic acceleration, many teachers remain skeptical, and are sometimes even strongly opposed toward this option in gifted education. Teachers worry about potential negative consequences, which mainly concern the child's social and emotional development (Benbow, 1992; Gross, 1992; Heinbokel, 1997; Heller, 1992; Hoogeveen, 2000; Southern, Jones, & Fiscus, 1989; Townsend & Patrick, 1993). Several researchers point out that this negative attitude is based on presumptions, pedagogic, psychological or political attitudes, or once-only experiences, rather than on systematic observations

(e.g., Gross, 1992; Heinbokel, 1997; McCluskey, Massey & Baker, 1997; Southern & Jones, 1991-a).

A negative attitude of teachers toward acceleration can bias the expectations and beliefs about an accelerated child, which in turn can be a direct cause of subsequent interpersonal problems. As pointed out by Harris, Milich, and McAninch (1998), teacher expectancies about unlikable behavior of a student can act as self-fulfilling prophecies (see also Brophy & Good, 1974; Jussim, Smith, Madon, & Palumbo, 1998). Furthermore, teacher expectancies and beliefs about a child can influence the behavior of the child's peers, and may so contribute to interpersonal problems among the students.

In the decision to accelerate a student or not, the teacher's opinion is often an important factor. In the Dutch educational system, the teacher's opinion is even the decisive factor in the procedure. This is exemplified by a recent lawsuit of Dutch parents, who for a long time had tried to convince a school to accelerate their five-year-old daughter. The judicial decision was that the school should decide on whether or not to accelerate a child, and not the parents.

Up until now, no systematic study is available on the attitude of Dutch teachers toward acceleration. Most research on academic acceleration and teachers' attitudes toward acceleration was conducted in the United States, or, albeit to a lesser extent, in Germany, Australia and New Zealand. Because the Dutch educational system differs in important aspects from that in other countries, we cannot simply assume that Dutch teachers' attitudes will resemble those of their colleagues in other countries. Before describing our study in more detail, we briefly discuss the Dutch educational system.

#### *Education and acceleration in the Netherlands*

Dutch children enter Kindergarten at age four. Kindergarten (spanning two years) is obligatory and is integrated with primary school (spanning six years). Early entrance in grade one (i.e., first year of primary school) and acceleration throughout primary school are allowed. After six years of primary school, Dutch students enter

secondary school, typically at the age of 12. They can choose one of the following levels: (1) pre-vocational secondary education (VMBO), (2) senior general secondary education (HAVO), and (3) pre-university education (VWO and Gymnasium) (for more detailed information, see the website of the Dutch Ministry of Education, <http://www.minocw.nl/english/education/index.html>).<sup>1</sup>

In the 1980s, Van Boxtel (1987) reviewed the situation of gifted students in primary education in the Netherlands. He concluded that although special educational materials for gifted students were available, particularly in the fields of mathematics and language, there was no policy on structured teaching programs in which these special materials were used. Concerning acceleration Van Boxtel observed a, in his terms, “paradoxical situation” (p. 208): Although teachers had a negative attitude toward skipping grades, they quite often applied this instructional practice.

#### *Purpose of the present study*

The purpose of this study is two-fold. First, in a survey study, we investigated secondary school teachers' experiences with accelerated students, their attitudes toward acceleration and accelerated students (with regard to social, emotional, and academic behavior), and the extent to which these attitudes are modulated by the teachers' age, sex, number of years of teaching experience, type of school at which they teach, the subject they teach, the amount and quality of their experience with accelerated students, their opinion on whether a special approach toward gifted students is advisable, and their opinions on the desirability of special instructional practices for gifted students, in particular acceleration. Second, in an intervention study, we examined whether specific information could change the attitude of teachers toward acceleration. We provided a sample of teachers with detailed information on acceleration and giftedness. Teachers received written information and attended an information meeting, received written information only, or received no information at all. In both studies, we focused on the most frequently applied form of acceleration in the Netherlands, namely to skip a grade. The teachers in

both studies taught in first grade of secondary school. The reason to investigate this group was that acceleration of students generally takes place in primary school, hence, teachers teaching in the first grade of secondary school are the first ones confronted with young students while not having been involved in the decision to accelerate.

## Method

### *Participants*

*Survey.* Data were collected from 334 teachers, together teaching in first grade of 31 Dutch secondary schools (20 combined schools, 11 gymnasia)<sup>2</sup> in 28 villages and cities in The Netherlands. 301 Teachers (men: 184; women: 109; unknown: 8), aged 22 to 64 ( $M = 43.97$ ,  $SD = 9.31$ ), of 21 schools, filled in the first questionnaire (sent out at the beginning of the school year, see Materials section). 226 Teachers (men: 110; women: 83; unknown: 32), aged 23 to 65 ( $M = 44.29$ ,  $SD = 9.41$ ), of 21 schools, filled in the second questionnaire (sent out at the end of the school year). 193 Teachers from the latter group had also filled in the first questionnaire.

The sample of teachers covered all subjects taught in secondary school: science ( $n = 76$ ), social sciences ( $n = 61$ ), Dutch language ( $n = 23$ ), foreign languages ( $n = 74$ ), physical education ( $n = 19$ ), and creative subjects (like art, music;  $n = 18$ ). Some teachers taught more than one subject.

*Intervention.* Fifty of the above teachers taught on a school that received written information and where an information meeting took place; 36 of them were present at the meeting. 43 Teachers taught in a school to which only written information had been sent, and where no information meeting was held.

### *Materials*

Questionnaires were used to measure experiences and attitudes of the secondary-school teachers concerning acceleration and accelerated students. The questionnaires were in Dutch.

The first questionnaire, presented at the beginning of the academic year (September), consisted of (1) an introduction that explained the term acceleration and how the questionnaire should be filled in; (2) demographic items dealing with teaching experience in years, subject(s) and grades in which the teacher teaches, and teacher's sex and age; (3) four questions on the desirability of special instructional practices for gifted students, the usefulness of acceleration, and the quantity and quality of experience with accelerated students (see Appendix); (4) a series of 31 statements regarding acceleration, in which teachers were asked to express their opinions on a 5-point scale (1 = strongly disagree; 5 = strongly agree). With these statements we aimed to gain a deeper insight into the opinions and attitudes of Dutch secondary school teachers toward acceleration and accelerated students. The stem statements were derived from commentaries made by interviewed teachers (Hoogeveen, 2000) and the research literature on acceleration (e.g. Saylor, & Brookshire, 1993; Townsend & Patrick, 1993; Vialle et al., 1997). The statements are presented in Appendix A.

The second questionnaire, presented at the end of the academic year (June), was the same as the first questionnaire. Seven questions, related to the intervention-related information on acceleration and giftedness, were added (see Appendix A).

### *Procedure*

*Survey.* A year before the questionnaires were sent to schools, parents of accelerated students in their last year of primary school were asked to participate in this study.<sup>3</sup> Selected parents gave the name of the secondary school their son or daughter would go to next year. The resulting 31 schools received a letter, explaining the purpose of the investigation (without going into too much detail) and

asking for cooperation. Teachers from participating schools filled in a questionnaire in September and June (the beginning and the end of the academic year, respectively). Of the 978 questionnaires sent in September, 301 were filled in and sent back. Of the questionnaires sent in June, 226 were filled in and sent back. 193 (85%) of them had also filled in the questionnaire at the beginning of the academic year.

*Intervention.* In February, written information about acceleration and giftedness (seven pages long, including a literature review, references and addresses of relevant institutions) was sent to contact persons of 10 schools, asking to hand it out to the participating teachers. In 9 schools an information meeting took place, in which a psychologist, staff member of the Center for the Study of Giftedness, informed teachers about giftedness and acceleration and answered questions. Participating teachers also received the above-mentioned written information.

## **Results**

The results are reported in two parts: survey and intervention.

### *Survey*

The reported data are from the first questionnaire only, sent out at the beginning of the school year.

*Experience with accelerated students.* To answer the question 'How much and what kind of experience do Dutch teachers of secondary schools have with accelerated students?' we adopted a descriptive approach.

One hundred and seventy seven teachers (58.8%) stated that they had experience with accelerated students: 56.5% of them with 1 to 5 students, 13.6% with 6 to 10 students, 11.9% with 11 to 20 students, 6.2% with more than 21 students; the remaining teachers (11.9%) did not provide an estimation. Eighty-seven teachers (28.9%) reported not to have had any experience with accelerated students, and twenty-seven teachers (6%) did not know if they had had experience



with accelerated students. Nineteen teachers (6.2 %) did not provide an answer to this question.

Of the teachers who reported to have had experience with accelerated students, 77 teachers (43.5%) had positive to very positive experiences. In an optional exemplification of their experiences, it was remarked that *'These students can function very well in a group / are accepted'* [a 32-year old female biology teacher], or *'These students seldom cause problems. They adapt themselves very well and are fairly accepted'* [a 57-year old male history teacher].

Fifty teachers (28.2%) indicated to have had negative to very negative experiences, which were exemplified by additional comments they made like *'Social-emotionally they function badly. Their classmates do not accept them or ignore them'* [59-year old female teacher of French] or *'Students missed a lot of extra-curricular activities, like school-camp, school-drama'* [a 42-year old male teacher of history].

Twenty-five teachers (14.1%) reported to have had positive as well as negative experiences, which was exemplified by additional comments like *'In most of the cases positive. In some cases negative with respect to the behavior of these students. In these cases, the parents played a dubious part in it.'* [a 40-year old male teacher of history and religion], or *'Highly dependent upon the student. There are students who are doing well or very well, but some do bad or very bad.'* [a 59-year old male teacher of physical education and computer skills].

*Teachers' opinions about acceleration and accelerated students.* On the question whether a special approach toward gifted students is advisable, the majority of the teachers ( $n = 197$ ; 65.4%) expressed that a special approach toward gifted students is sometimes advisable. Ninety-two teachers (31.3%) indicated that a special approach is always advisable. Only five teachers (1.7%) thought a special approach toward gifted students is never advisable.

When asked whether academic acceleration in primary school is a useful intervention in the education of gifted students, most teachers ( $n = 218$ ; 76.6%) answered that acceleration is sometimes useful. Forty-nine teachers (17.2%)

considered acceleration often or always useful in gifted education. Thirteen teachers (4.6%) responded that acceleration is never a useful intervention in the education of gifted students.

The 31 statements about acceleration were analyzed for reliability<sup>4</sup>. The internal reliability for the 31 items was good (Cronbach's  $\alpha = .92$ ). Explorative factor analyses with varimax rotation were performed to investigate whether one or more dimensions could be distinguished (see Table 3.1).

Table 3.1: Rotated Factor Matrix of the 31 statements about acceleration

	Factor					
	1	2	3	4	5	6
1		.32			.34	
<b>2</b>	<b>.50</b>					
<b>3</b>			<b>.67</b>			
4					.71	
<b>5</b>			<b>.74</b>			
6			.45			.46
<b>7</b>	<b>.62</b>					
8			-.32		.44	
9	.35					
10						
11	.38		.42			
12			-.37	.31	.33	-.47
<b>13</b>	.31		<b>.52</b>			
<b>14</b>				<b>.54</b>	.41	
<b>15</b>	<b>.74</b>					
<b>16</b>	-.40			<b>.41</b>		
17	.47				-.33	
<b>18(r)</b>			<b>.45</b>			
<b>19</b>	<b>.67</b>					
<b>20</b>				<b>.68</b>		
<b>21</b>		.42		<b>.55</b>		
<b>22 (r)</b>	.34			<b>.42</b>		
23	.41		.37			.38
24		.45		.37		
25						
<b>26</b>		<b>.53</b>				
<b>27</b>		<b>.56</b>				
<b>28</b>		<b>.64</b>				
<b>29</b>		<b>.40</b>				
<b>30</b>		<b>.75</b>				
31		.35				

Note. Extraction Method: Maximum Likelihood. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 10 iterations.

These analyses revealed that the  $H_0 = 6$  factors was not rejected ( $\chi^2 (294) = 310.29$ ,  $p = .246$ ), so we may conclude that there are no more than 6 factors. On the basis of the rotated factor matrix, four scales were formed, consisting of 18 of the 31 original statements (see Table 3.2). These four scales describe the teachers' attitudes toward and opinions about accelerated students, which could be characterized and ordered in terms of the amount of variance explained: (1) Isolation (34.49%), (2) Social competence (10.89%), (3) School motivation and achievement (7.42%), and (4) Emotional problems (6.55%). Table 3.3 presents the mean scale ratings. The internal reliability for the items of the different scales was reasonable, Cronbach's  $\alpha$ 's were .79 (scale 1), .76 (scale 2), .75 (scale 3) and .80 (scale 4).

*Table 3.2: Means and Standard Deviations of Selected Items on the basis of Rotated Factor Matrix (Four Scales)*

Items	<i>M</i>	<i>SD</i>	IS	SC	A/M	EP
2. Gifted children have more social emotional problems in groups with age-mates than in groups with older children.	4.14	2.17		.52		
3. Acceleration leads to better motivation for gifted students.	6.08	1.81			.70	
5. Acceleration prevents (mental) laziness.	5.97	2.14			.76	
7. Acceleration has a positive influence on social emotional functioning.	3.65	1.91		.65		
13. In general acceleration leads to good achievement in school.	4.81	1.71			.54	
15. Gifted students in general function better socially after acceleration.	4.11	1.71		.71		
16. In general, gifted students function less well emotionally after acceleration.	5.27	1.80				.44
18. Acceleration is no solution for underachievement.	5.51	2.08			.49	
19. In general, accelerated students have better social contacts.	3.71	1.63		.68		
20. Accelerated students show more behavioural problems than not accelerated students.	5.03	1.80				.75
21. In general, accelerated students feel isolated.	5.46	1.80	.40			.57
22. Accelerated students do not have more emotional problems than not accelerated students.	4.54	1.84				.38

Teacher attitude toward accelerated students

26. It is difficult for an accelerated student to be the classes youngest, as well as the smartest.	6.58	2.01	.52
27. Students of an 'older' class will not accept an accelerated student.	4.80	1.77	.55
28. An accelerated student will have problems in puberty, because other students are more 'developed'.	6.21	1.82	.72
29. An accelerated student will be less independent than is expected in the class where he or she is.	4.43	1.92	.40
30. The position of an accelerated student will be exceptional because of his/her younger age.	5.97	1.94	.73

IS.= Isolation; SC = Social Competence; A/M = Achievement/Motivation; EP = Emotional Problems

*Table 3.3: Likert Scale (1-9) Ratings of Teachers' Opinions on Accelerated Students*

Characteristic of accelerated student	<i>M</i>	<i>SD</i>
Social competence	3,90	1,46
Isolation	5,60	1,35
School achievement and motivation	5,34	1,47
Emotional problems	5,16	1,32

*Teachers' characteristics and their opinions about accelerated students.* In subsequent analyses, we explored whether teachers' attitudes and opinions regarding accelerated students (in terms of the factors Social competence, Isolation, School motivation and achievement, and Emotional problems) were modulated by teacher characteristics.

To answer these questions, the data were analyzed by means of two different types of statistical analyses, following from the independent variables' level of measurement. Pearson's correlation tests were conducted to explore the relationships between age (ranging from 22-64), number of years of teaching

experience (ranging from 0-39) and each of the four attitude scales. A series of one-factor ANOVAs were performed with either sex (female, male), type of school (combined school, gymnasium), subject taught (science, social sciences, Dutch language, foreign languages, physical education, creative subjects, combination of subjects), quantity of experience with accelerated students (0, 1 to 5, more than 5, or unknown), quality of experience with accelerated students (positive, negative, mixed), opinion on the necessity of a special approach toward gifted students (often/always, sometimes/never), or opinion about acceleration as an option in gifted education (always/often, sometimes, never) as independent variables on each of the four attitude scales Social competence, Isolation, School motivation and achievement, and Emotional problems. An alpha level of .05 was used for all statistical tests. Post-hoc tests were Bonferroni tests.

*Social competence.* A higher score on the social competence scale means that teachers have a more positive attitude toward the social competence of accelerated students. Analyses on the attitude scale Social Competence of accelerated students showed that there were statistically significant effects for teachers' opinion about acceleration,  $F(2, 280) = 25.69, p < .0001$ , partial  $\eta^2 = .16$ , the quantity of experience with accelerated students,  $F(3, 301) = 6.63, p < .0001$ , partial  $\eta^2 = .06$ , and the quality of experience with accelerated students,  $F(2, 152) = 34.59, p < .0001$ , partial  $\eta^2 = .32$ .

Post-hoc tests showed that teachers who considered acceleration often or always a good option in the education of gifted children express a more positive attitude toward the social competence of accelerated students ( $M = 5.02, SD = 1.50$ ) than teachers who thought that acceleration is sometimes ( $M = 3.68, SD = 1.32$ ) or seldom or never ( $M = 3.03, SD = 1.22$ ) an option in gifted education (both  $p$ 's  $< .001$ ).

As regards the quantity of experience with accelerated students, post-hoc tests showed that teachers with no experience ( $M = 4.17, SD = 1.25$ ) and teachers who did not know if or how much experience they had ( $M = 4.29, SD = 1.66$ ) with accelerated students had a higher score than teachers with experience with more

than five accelerated students ( $M = 3.24$ ,  $SD = 1.47$ ;  $p < .05$ ). The difference between teachers who did not know if they had experience also differed significantly from teachers who had experience with one to five accelerated students ( $M = 3.81$ ,  $SD = 1.39$ ).

Post-hoc tests also indicated that teachers with positive experiences express a more positive attitude ( $M = 4.47$ ,  $SD = 1.40$ ) toward the social competence of accelerated students than teachers with mixed ( $M = 3.44$ ,  $SD = 3.44$ ) or negative ( $M = 2.58$ ,  $SD = 1.08$ ) experiences (both  $p$ 's  $< .003$  or better). The mean difference of teachers with mixed experiences and teachers with negative experience was also significant ( $p = .018$ ).

Marginally significant effects were found for sex,  $F(1,293) = 3.24$ ,  $p = .073$ , partial  $\eta^2 = .01$ , type of school,  $F(1,301) = 3.59$ ,  $p = .059$ , partial  $\eta^2 = .01$ , and opinion on the necessity of a special approach toward gifted students,  $F(1,294) = 3.57$ ,  $p = .060$ , partial  $\eta^2 = .01$ . Male teachers showed somewhat higher scores on this scale ( $M = 4.00$ ,  $SD = 1.48$ ) than female teachers ( $M = 3.68$ ,  $SD = 1.44$ ), and teachers of combined schools showed somewhat higher scores ( $M = 3.97$ ,  $SD = 1.44$ ) than teachers of gymnasias ( $M = 3.55$ ,  $SD = 1.55$ ). Teachers who believed that a special approach toward gifted students is always or often necessary showed slightly higher scores ( $M = 4.12$ ,  $SD = 1.64$ ) than teachers who thought it never or sometimes necessary ( $M = 3.77$ ,  $SD = 1.37$ ). The effect size measures indicate, however, that the proportion of variance in the social competence scale attributable to sex, type of school, or opinion on the necessity of a special approach toward gifted students is small.

No effect of the variable subject taught was found. Furthermore, the correlations between age and social competence and between number of years of teaching experience and social competence were not significant.

*Isolation.* Analyses on the beliefs about the isolation of accelerated students showed significant effects of opinion about acceleration,  $F(2, 280) = 13.51$ ,  $p < .0001$ , partial  $\eta^2 = .09$ , and quality of experience with accelerated students,  $F(2, 152) = 25.90$ ,  $p < .0001$ , partial  $\eta^2 = .26$ .

Post-hoc tests indicated that teachers who considered acceleration often or always a good option in the education of gifted children, expressed less negative expectations about the isolation of accelerated students ( $M = 4.96$ ,  $SD = 1.35$ ) than teachers who thought acceleration is sometimes ( $M = 5.65$ ,  $SD = 1.29$ ) or seldom or never ( $M = 6.70$ ,  $SD = 1.18$ ) an option in gifted education (both  $p$ 's  $< .002$  or better). The mean difference between teachers for whom acceleration is sometimes, and teachers for whom it seldom or never is an option, was also significant ( $p = .003$ ).

Furthermore, teachers with negative experiences with accelerated students were somewhat more negative ( $M = 6.52$ ,  $SD = 1.08$ ) about the isolation of accelerated students ( $p = .07$ ) than teachers with mixed experiences ( $M = 5.78$ ,  $SD = 1.37$ ), who in turn were more negative than teachers with positive experiences ( $M = 4.82$ ,  $SD = 1.42$ ;  $p = .005$ ).

No significant effects were found for sex, type of school, subject taught, quantity of experience with accelerated students, and opinion on the necessity of a special approach toward gifted students. Furthermore, the correlations between age and isolation and between number of years of teaching experience and isolation were not significant.

*School motivation and achievement.* Analyses of the factor School motivation and achievement of accelerated students revealed significant effects of sex,  $F(1,293) = 6.55$ ,  $p = .011$ , partial  $\eta^2 = .02$ , opinion about acceleration,  $F(2, 280) = 27.28$ ,  $p < .0001$ , partial  $\eta^2 = .17$ , the quantity of experience with accelerated students,  $F(3, 301) = 4.12$ ,  $p = .007$ , partial  $\eta^2 = .04$ , and the quality of experience with accelerated students,  $F(2,152) = 32.86$ ,  $p < .0001$ , partial  $\eta^2 = .31$ .

Male teachers were slightly more positive about school motivation and achievement ( $M = 5.50$ ,  $SD = 1.44$ ) than female teachers ( $M = 5.05$ ,  $SD = 1.51$ ).

Post-hoc tests indicated that teachers who considered acceleration often or always a good option in gifted education were more positive about school motivation and achievement ( $M = 6.46$ ,  $SD = 1.30$ ) than teachers who thought acceleration is sometimes ( $M = 5.13$ ,  $SD = 1.36$ ) or seldom or never ( $M = 4.28$ ,  $SD$

= 1.30) an option in gifted education (both  $p$ 's < .001). The difference between the latter two groups of teachers was also significant ( $p = .032$ ).

Post-hoc tests also indicated that teachers with no experience with accelerated students had a higher mean score on this scale ( $M = 5.59$ ,  $SD = 1.49$ ) than teachers with experience with more than five accelerated students ( $M = 4.75$ ,  $SD = 1.53$ ;  $p = .005$ ).

Teachers with positive experiences with accelerated students were more positive about their school motivation and achievement ( $M = 6.01$ ,  $SD = 1.17$ ) than teachers with mixed experiences ( $M = 4.96$ ,  $SD = 1.27$ ;  $p < .006$ ), who in turn were more positive than teachers with negative experiences ( $M = 4.21$ ,  $SD = 1.31$ ;  $p = .043$ ).

No significant effects were found for type of school, subject taught, and opinion on the necessity of a special approach toward gifted students. Furthermore, the correlations between age and school motivation and achievement and between number of years of teaching experience and school motivation and achievement were not significant.

*Emotional problems.* Analyses on opinions about emotional problems of accelerated students showed significant effects for the quantity of experience with accelerated students,  $F(3,301) = 4.43$ ,  $p = .005$ , partial  $\eta^2 = .04$ , the quality of experience with accelerated students,  $F(2,152) = 53.11$ ,  $p < .0001$ , partial  $\eta^2 = .42$ , and opinion about acceleration,  $F(2, 280) = 17.93$ ,  $p < .0001$ , partial  $\eta^2 = .12$ .

Post-hoc tests showed that teachers who had experience with more than five accelerated students were more negative about the emotional problems of accelerated students ( $M = 5.58$ ,  $SD = 1.31$ ) than teachers who did not know if they had had experience with accelerated students ( $M = 4.69$ ,  $SD = 1.24$ ;  $p = .002$ ).

Teachers with negative experiences with accelerated students were more negative about the emotional problems ( $M = 6.45$ ,  $SD = 1.17$ ) than teachers with mixed experiences ( $M = 5.67$ ,  $SD = .93$ ;  $p = .030$ ), who in turn were more negative than teachers with positive experiences ( $M = 4.23$ ,  $SD = 1.31$ ;  $p < .001$ ).



Post-hoc tests also showed that teachers who considered acceleration often or always a good option in the education of gifted children were less negative about emotional problems ( $M = 4.34, SD = .17$ ) than teachers who believed acceleration is sometimes ( $M = 5.25, SD = .09$ ), or seldom or never ( $M = 6.11, SD = .29$ ) an option in gifted education (both  $p$ 's  $< .001$ ). The difference between the latter two groups of teachers was also significant ( $p = .005$ ).

No significant effects were found for sex, type of school, subject taught, and opinion on the necessity of a special approach toward gifted students. Furthermore, the correlations between age and emotional problems and between number of years of teaching experience and emotional problems were not significant.

#### *Intervention study*

The second research question was whether information on acceleration and accelerated students modulates teachers' attitudes toward and opinions about accelerated students. Teachers' attitudes and opinions were specified in terms of each of the four attitude factors (i.e., Social competence, Isolation, School motivation and achievement, and Emotional problems), and a generalized attitude score (total score of all items). Unit of analysis was school, and the mean scores of teachers within each school were merged. Originally, two forms of intervention were implemented: written information and a meeting or written information only. In the latter case, however, the written information, sent to the contact persons in the schools, had reached only a small number of teachers ( $n = 13$ ). We therefore decided to distinguish between only one intervention group, i.e., teachers of 7 schools where an information meeting took place (and where written information was distributed) and a control group, i.e., teachers of 9 schools where no information meeting took place.<sup>5</sup>

A series of 2 (intervention: meeting, no meeting) by 2 (test: pretest/1<sup>st</sup> questionnaire, posttest/2<sup>nd</sup> questionnaire) ANOVAs was performed on the mean scores on the variables General attitude, Social competence, Isolation, School

motivation and achievement, and Emotional problems. Intervention was treated as a between-subjects variable and test was treated as the repeated measure. The mean scores are presented in Table 3.4.

*Table 3.4: Mean Scores and Standard Deviations on the Four Attitude Scales of Teachers on Schools with and without an Information Meeting, measured before (T1) and after (T2) the meeting*

		Information meeting		No information meeting	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Isolation	T1	5.30	.33	5.21	1.04
	T2	5.31	1.76	5.97	.79
Social Competence	T1	4.03	.42	3.88	.50
	T2	4.73	.96	3.73	.93
Achievement/motivation	T1	5.23	.39	5.33	.59
	T2	5.56	.59	4.81	.76
Emotional Problems	T1	5.12	.40	5.18	.33
	T2	4.20	1.08	5.66	1.14

The ANOVA on the general attitude factor revealed a significant interaction between intervention and test,  $F(1, 14) = 9.22, p = .009$ , partial  $\eta^2 = .40$ . Teachers of schools where a meeting took place expressed a more positive general attitude toward accelerated students after the intervention ( $M_{\text{pre}} = 4.16, SD = .18$  and  $M_{\text{post}} = 4.53, SD = .26$ ), whereas the mean score of teachers on schools without an information meeting did not increase on the second test ( $M_{\text{pre}} = 3.76, SD = .16$  and  $M_{\text{post}} = 3.27, SD = .23$ ).

The analysis on Social competence showed a marginally significant interaction between intervention and test,  $F(1, 14) = 4.26, p = .058$ , partial  $\eta^2 = .23$ . Teachers on schools with an information meeting were more positive about the

social competence of accelerated students after the intervention ( $M_{pre} = 4.03$ ,  $SD = .42$  and  $M_{post} = 4.73$ ,  $SD = .96$ ), whereas the attitude of their colleagues on schools without an information meeting remained the same ( $M_{pre} = 3.88$ ,  $SD = .50$  and  $M_{post} = 3.73$ ,  $SD = .93$ ).

The analysis on the factor Isolation showed no significant interaction,  $F(1, 14) = 1.29$ ,  $p = .28$ , partial  $\eta^2 = .08$ .

In the analysis on School motivation and achievement, the interaction between intervention and test approached significance,  $F(1, 14) = 3.09$ ,  $p = .10$ , partial  $\eta^2 = .18$ . In line with the general pattern of results, teachers on schools at which an information meeting was held were somewhat more positive about accelerated students' school motivation and achievement after the intervention ( $M_{pre} = 5.24$ ,  $SD = .39$  and  $M_{post} = 5.56$ ,  $SD = .59$ ) than their colleagues at schools without a meeting were ( $M_{pre} = 5.33$ ,  $SD = .59$  and  $M_{post} = 4.81$ ,  $SD = .76$ ).

Finally, the interaction between intervention and test was significant in the analysis on the factor Emotional problems,  $F(1, 14) = 5.91$ ,  $p = .029$ , partial  $\eta^2 = .30$ . Again, teachers of the schools where an information meeting took place were less negative about the emotional problems of accelerated students after the intervention ( $M_{pre} = 5.12$ ,  $SD = .40$  and  $M_{post} = 4.20$ ,  $SD = 1.08$ ), in contrast to teachers on schools without an information meeting ( $M_{pre} = 5.18$ ,  $SD = .33$  and  $M_{post} = 5.66$ ,  $SD = 1.14$ ).

### Discussion

In the study reported in this paper, which is part of an ongoing and more extensive research project on acceleration in gifted education in the Netherlands, we examined secondary school teachers' opinions about acceleration and accelerated students. The survey study revealed that most teachers think a special approach for gifted students is always (31%) or sometimes (65%) advisable. When asked about their opinion about acceleration in primary school, 77% and 17% of the teachers considered this sometimes or often/always a useful option, respectively. Of the teachers who reported to have experience with accelerated students, 44% had

positive or very positive experiences, 28% had negative or very negative experiences, whereas 14% had mixed experiences. Dutch secondary school teachers thus appear to hold a more positive attitude to acceleration than Southern and Jones (1991-b) observed in their review of the literature on teacher attitudes in the US, and than Heinbokel (1997), Gross (1992) and Townsend and Patrick (1993) found in Germany, Australia, and New Zealand, respectively. These teachers expressed serious reservations on acceleration and rarely recommend early entrance or acceleration.

In subsequent analyses, we aimed to gain a more detailed insight into the teachers' opinions about accelerated students, in particular with respect to their social competence, isolation, school motivation and achievement, and emotional problems. Teachers appeared to be most concerned with the isolation of accelerated students, and also expressed worries on their social competence and the development of emotional problems. Their attitude toward school motivation and achievement was less negative. This pattern is consistent with an earlier study by Southern et al. (1989), who found that factors associated with social and emotional adjustment were the most important factors in determining negative attitudes toward acceleration. Southern et al.'s respondents were particularly concerned about social adjustment. Concerns about the academic welfare of the potential accelerant did not figure prominently in the attitudes toward acceleration.

We further examined whether opinions regarding each of these student factors were modulated by teacher characteristics. The results showed a consistent pattern. Opinions about social competence, isolation, school motivation and achievement, and emotional problems of accelerated students were qualified by the amount of experience teachers had with accelerated students. As the amount of experience with accelerated students increased, teachers expressed less positive opinions on the students' social competence and school motivation and achievement, and had more negative opinions on their emotional problems and social isolation. This observation is somewhat different from that by Southern et al. (1989), who studied practitioners' opinions about acceleration in the state Ohio,

United States. Southern et al. (1989) divided their survey forms into highly positive versus highly negative reactions, and performed follow-up phone interviews with 10% of the respondents in each group. They observed that opinions about acceleration tended to be more positive as the amount of personal experience with acceleration increases. Our observation could imply that Dutch accelerated students are less social-emotionally competent than their North-American peers. A study on the social status of accelerated students in their first two years of secondary school (Hoogeveen, van Hell, & Verhoeven, in press) showed that these students indeed had a less positive social status than their classmates. However, in a study where highly intelligent ( $IQ > 129$ ) accelerated and non-accelerated *age-mates* were compared with respect to their peer contacts and self-concept, no differences were found (Hoogeveen, van Hell, & Verhoeven, submitted). An alternative explanation, one that has been mentioned in several other studies (e.g., Heinbokel, 1997; Southern et al., 1989; Vialle et al., 1997), is that teachers' preconceptions and inadequate beliefs on the consequences of acceleration make them see what they expect to see, which may even lead to self-fulfilling prophecies (Brophy & Good, 1974; Jussim et al., 1998). Moreover, such preconceptions may make teachers see what they want to see, as was exemplified by one of the teachers in our survey. This teacher commented that of all accelerated students, he noticed only the accelerated students with problems, and not the accelerated students who functioned well.

Perhaps a more decisive factor in qualifying opinions on acceleration and accelerated students, therefore, is not the amount of experience per se, but the quality of this experience. Indeed, the effects size measures indicated that a substantial proportion of the total variance in teacher opinions about social competence, isolation, school motivation and achievement, and emotional problems (ranging from 26-41%) is attributable to the quality of previous experiences with accelerated students. Teachers who have had positive experiences with accelerated students were more positive on students' social competence and school motivation and achievement than teachers with mixed previous experiences, who in turn were more positive than teachers with negative previous experiences. Likewise, teachers

who have had negative experiences with accelerated students expressed a more negative opinion on the students' emotional problems and their social isolation than teachers with mixed experiences, who in turn were less negative than teachers with positive experiences with accelerated students.

The third variable that was consistently related to teacher opinions about accelerated students was the teachers' attitude toward acceleration as a service option in gifted education. Again, the pattern was highly consistent across all four factors. Teachers who consider acceleration always or often a useful option in gifted education expressed more positive opinions in the students' social competence and school motivation and achievement than teachers who consider acceleration sometimes useful, who in turn were more positive than teachers who consider acceleration seldom or never a useful option. Likewise, teachers who regard acceleration seldom or never a useful option in gifted education expressed more negative opinions on the emotional problems and social isolation of accelerated students than those who regard acceleration sometimes useful, who in turn were less negative than those who considered acceleration often or always a useful option.

Teacher characteristics like sex, the subject(s) they teach, and the type of school at which they teach were not related to teachers' opinions on social competence, isolation, school motivation and achievement and emotional problems of accelerated students (at best, the effects were very small). Likewise, age and number of years of teaching experience were not related to any of the four attitude scales.

The consistent finding that teachers' opinions regarding the social, emotional, and academic behavior of accelerated students was related to the quality of their experiences with accelerated students and their opinion on acceleration has clear implications for gifted-child education. It points at the urgent need for specific and targeted information on giftedness and academic acceleration to teachers. At least in the Netherlands, many teachers have only rudimentary, 'common-sense' knowledge on giftedness, acceleration, and the potential effects of acceleration on children's cognitive and social-emotional development. Interviews revealed that

teachers feel insecure about the effects of acceleration (Hoogeveen, 2000). Targeted teacher training is needed, emphasizing that, generally speaking, acceleration does not lead to academic or social-emotional problems, and that it even potentially increases a student's self-esteem, motivation, and may prevent the development of mental laziness and underachievement (e.g., Gross, 1992; Rimm & Lovance, 1992; Van Tassel-Baska, 1986).

Our intervention study indicates that specific and targeted information on acceleration and giftedness may indeed influence teachers' opinions on accelerated students, and that it can bring their opinions more in line with the results of scientific research on the effects of acceleration on social-emotional well-being and academic achievement of accelerated students. Teachers who attended an information meeting on giftedness and academic acceleration and received written information expressed more positive opinions about the social competence and school motivation and achievement after the intervention. Likewise, their opinions about the emotional problems of accelerated students were less negative after intervention. So, teacher attitudes toward accelerated students are not only related to the quality of their experiences with accelerated students and their opinions about acceleration, these attitudes can also be positively influenced by professional and objective information on giftedness and acceleration.

Another reason to provide teacher training about educating the gifted, at least in the Netherlands, is the observation that teachers' definitions of gifted students is often incomplete and sometimes even inadequate (Hoogeveen, 2000). The positive effects we observed of providing targeted information on giftedness and acceleration are corroborated by Davison (1996), Hanninen (1988), and Karnes and Whorton (1996). For example, Karnes and Whorton showed that teachers trained in gifted education are more effective teachers in specific programs for gifted and talented students than teachers without such training. They conclude that specialized courses in gifted-child education provide teachers with the necessary means to provide gifted and talented children appropriate instructions. Such

specialized teachers are more sensitive to the needs of gifted students, hence, their students will achieve better.

A practical problem in supplying such information to teachers is how to reach the teachers. As we learned from our study, sending written materials to schools does not automatically result in that the information reaches the teachers, even though all schools had agreed to participate in our study and had appointed a specific person to distribute the information.

In addition to knowing more about the consequences of acceleration in general, a crucial issue for practitioners in schools is to know which students may benefit from acceleration. In order to help them reach this decision, we developed a 'VersnellingsWenselijkheidsljst' (AccelerationDesirabilityList) (VWL) (Hoogeveen, Van Hell, & Verhoeven, 2003) (see Appendix F) . This, still experimental, instrument is developed for educators in primary school and aims to support educators and parents in the decision to accelerate a student or not. This assessment instrument may contribute to a more objectified decision on student acceleration and may potentially prevent erroneous decisions to accelerate or not to accelerate. After all, the research literature may converge on the idea that acceleration does not negatively affect social-emotional and academic behavior of students, this does not automatically apply to each and every individual student. And these are the students that may leave a profound memory trace in the teacher's mind, and may induce reservations in subsequent decisions teachers have to make regarding whether or not to accelerate a child. More insight into the merits and demerits of acceleration not only serves important diagnostic goals, but may also lead to an increased insight into intra-individual variation in harms and benefits associated with acceleration, which is a cardinal question to be answered in future research.



SELF-CONCEPT AND SOCIAL STATUS OF  
ACCELERATED STUDENTS IN THE FIRST  
TWO YEARS OF SECONDARY SCHOOL\*

*This study examined the self-concept and social status of accelerated and non-accelerated students in their first two years of secondary school in the Netherlands (equivalent to Grades 7 and 8 in the United States educational system). In 357 students from 18 Dutch secondary schools, we measured self-concept, sociometric status, and behavior reputations at three times (at the beginning and end of the first year and at the end of the second year of secondary school). Accelerated students had more positive self-concepts concerning school in general and mathematics than non-accelerated students, but a less positive social self-concept. In girls but not in boys, the difference in social self-concept of accelerated and non-accelerated*

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\* This chapter is in press: Hoogeveen, L., van Hell, J.G. & Verhoeven, L. (in press). Self-concept and social status of accelerated and non-accelerated students in the first two years of secondary school in the Netherlands. *Gifted Child Quarterly*.

Self-concept and social status of accelerated students in the first two years of secondary school

*students was no longer present at the end of the second year in secondary school. Accelerated students had a lower social status than non-accelerants, and were considered to be less cooperative, humorous, helpful, leading, and social than their non-accelerated peers. These peer-ratings were more negative for accelerated boys than for accelerated girls. Implications for the education of accelerated students, including the social emotional development of accelerated students in their first years of secondary school, are discussed.*

### **Introduction**

Because academic acceleration in primary school (in the form of early entrance or grade-skipping) becomes more and more popular (Hoogeveen, 2000; Mönks & Pflüger, 2005; Reyero & Touron, 2003), an increasing number of students who enter secondary school are younger than their classmates. Many people, especially educators but also parents, express their concerns about the implications of acceleration for children's cognitive development and academic achievement and for their social and emotional adjustment and well-being (e.g., Heinbokel, 1997; Reyero & Touron, 2003; Southern & Jones, 1991a). Teachers and parents appear particularly worried about accelerated students' social and emotional adjustment (e.g., Hoogeveen, van Hell, and Verhoeven, 2005; Southern, Jones, and Fiscus, 1989). They tend to assume that accelerated students' social and emotional maturity is related to their chronological age rather than to their mental age (Robinson, 2004; see, e.g., Robinson and Noble (1992) for evidence against this assumption), and are afraid that accelerated students will experience social and emotional problems at some point later in their school career. This is worded by a 51-year old history teacher of a Dutch secondary school: 'They will behave as solitaries, isolated, having problems to socialize, behaving as little professors'.

To what extent are such worries about the anticipated harmful effects of acceleration substantiated by empirical research? Studies on the cognitive and academic effects of acceleration generally report (strong) positive effects on academic achievement and educational career (for a review, see Kulik, 2004). Studies on the social and emotional effects of acceleration, although considerably smaller in number, also find no clear evidence that being younger than one's classmates is associated with major social or psychological difficulties (Kulik, 2004; Robinson, 2004). In contrast to the overwhelmingly positive effects of acceleration on academic performance, findings on emotional and social effects of acceleration are less conclusive and more mixed, and vary from small negative effects to no effects to small positive effects (see for

reviews, Cornell, Callahan, Bassin, & Ramsay, 1991; Kulik, 2004). In his discussion of the results of three meta-analytic studies on acceleration, Kulik (2004) concludes that the findings of the four studies on emotional and social effects of acceleration included in these meta-analyses are fragmentary. These studies found no or small negative effects of acceleration on self-acceptance and personal adjustment (Cornell, Callahan, & Loyd, 1991; Robinson & Janos, 1986). Proctor, Black, & Feldhusen (1986) showed that children who were admitted to primary school at an earlier age (early entrants) had strong positive self-concepts, showed no emotional, social, and personality maladjustments, and were as well-accepted and as popular as other, non-accelerated students. In a recent study on the socio-affective impact of early entrance, Gagné and Gagnier (2004) also found no substantial differences in adjustment between early entrants and regularly admitted children (although teachers tended to rate early entrants less well-adjusted than their class-mates). In their study of accelerated 8<sup>th</sup>-grade students, Saylor and Brookshire (1993) reached a similar conclusion. They found that accelerated students display levels of emotional adjustment and feelings of acceptance by others that are higher than those of regular students, and are comparable to those of older students identified as gifted. Richardson and Benbow (1990) studied self-reported psychosocial indices of gifted students at age 18 and 23, and found no differences between accelerated and non-accelerated students in their self-esteem, internal locus of control, self-acceptance and self-identity or self-reported social interactions.

With respect to the studies on the effects of acceleration on gifted students' social emotional development, two aspects have been widely cited as important: self-concept and emotional well-being. The relevance of these two variables will now be discussed.

### *Self-concept*

It is widely acknowledged that self-concept has a considerable impact on the academic and social performance of a person. Several definitions of the term self-

concept exist in the literature (see Byrne, 1996), of which the majority assumes that self-concept is a multidimensional concept (e.g. Swan, Chang-Schneider, & McClarty, 2007). In this study, we follow Shavelson, Hubner and Stanton's (1976) classical self-concept model, in which self-concept is conceptualized as a person's self-perceptions that are formed through experiences with and interpretations of the environment. According to Shavelson et al. (1976), self-concept is multidimensional and hierarchical. The global or composite self-concept is composed of academic self-concept and non-academic self-concept. The academic self-concept is subdivided according to different academic areas. The non-academic self-concept is subdivided into social self-concept, emotional self-concept and physical self-concept. Based on the Shavelson et al.'s model, Marsh developed the widely (but not exclusively) used Self-Description Questionnaire to measure the multiple dimensions of self-concept.

Studies that investigated the self-concept of accelerated students show mixed findings. Saylor and Brookshire (1993) examined eight-grade students and compared accelerated (hence, younger) students with students in gifted classes and in regular classes. Using a 6-items composite scale as a measure of global self-concept, they found that both the accelerated students and the students in gifted classes had a higher global self-concept score than the students in regular classes. In her narrative description of the school histories of five radically (three grades or more) accelerated children, Gross (1992) reported that these children display positive but moderate scores of self-esteem (as measured by the Coopersmith Self-Esteem Inventory). In a later study of students in Selective High Schools for academically gifted students in Australia, Gross (1996) found that accelerated students had a higher self-concept than non-accelerated students. Other researchers, however, observed no differences in self-concept or self-esteem of accelerated and non-accelerated students. Swiatek and Benbow (1991) found no difference between the self-concept of accelerated and ability-matched non-accelerated students, as measured by a 6-items self-esteem scale at least 5 years after acceleration had taken place. Lupkowski, Whitmore and Ramsay (1992) observed no differences in the

self-esteem scores (measured by the Coopersmith Self-Esteem Inventory) of early college entrants before and after their first semester in college. Likewise, Robinson and Janos (1986) observed that the psychosocial adjustment of early university entrants was comparable to equally gifted peers who were still in high school and regular-aged university students.

The contradictory findings of researchers examining the effect of acceleration on self-concept may be related to the definition and measurement of self-concept. The majority of studies tested students' global or composite self-concept, although most theories assume that self-concept is a multidimensional concept. In a meta-analysis on the self-concept of gifted children, Hoge and Renzulli (1993) found that gifted children had slightly higher self-concept scores than average children, but a breakdown by five types of self-concept scores showed that different results were obtained for the five self-concept types. Gifted children had more positive academic and a slightly more positive global/composite self-concept than average children. Gifted children's social self-concept was not different from that of average children, but their physical self-concept was more negative than that of average children.

A possible explanation for this finding can be found in the Big-Fish-Little-Pond-Effect (BFLPE), presented by Marsh (1987). Studies examining self-concept of academically advanced students in programs in gifted education (for a review and meta-analyses, see Hoogeveen, van Hell, Mooij and Verhoeven, submitted) tend to show a decrease in gifted students' self-concept once they are enrolled in a specific type of gifted education. The decreased self-concept of students in special educational programs for gifted children may be related to the BFLPE (Marsh, 1987): Students compare their achievements with those of their classmates. If gifted students compare themselves with average intelligent students in their normal classroom situation, their self-concept will be more positive than when they compare themselves with other gifted students participating in the special educational program. Marsh's (2003) extensive cross-cultural research on this effect

demonstrated the generalizability of the theory. Like students participating in a special program for gifted students outside their regular classroom (e.g., a pull-out program), accelerated students are designated as academically advanced (by the very fact of being accelerated) and are 'pulled out' of their original class. Being in a higher grade with older students, they will now compare their social behavior with older, and (physically) more 'mature',

students, which may lead to a lower physical self-concept, as found by Hoge and Renzulli (1993). This means that the global self-concept measures used in many earlier studies on accelerated students' self-concept may be conflated by the multidimensional character of self-concept. For example, a net outcome of no difference between accelerated and non-accelerated students in their global self-concept may actually reflect that accelerated students have a more positive academic self-concept but a lower physical self-concept than non-accelerated students.

To gain more insight into the self-concept of accelerated and non-accelerated students in the different domains, we used the Self-Description Questionnaire as developed by Marsh (1990) that measures multiple dimensions of self-concept.

#### *Social status*

Peers have a profound influence on children's behavior and development. A child's social status among peers affects his or her social and emotional development (e.g., Newcomb, Bukowski, & Pattee, 1993). Children who are actively disliked or rejected by their peers are at risk for developing problems in different areas, including academic achievement (e.g., Parker & Asher, 1987; Wentzel & Asher, 1995), social relations and interactions (e.g., Patterson, Kupersmith, & Griesler, 1990), and mental health, for example, loneliness (e.g., Cassidy & Asher, 1992), social anxiety (e.g., Inderbitzen, Walters, & Bukowski, 1997), or depression (e.g., Boivin, Poulin, & Vitaro, 1994).

Although intellectually advanced children tend to be socially and emotionally advanced as well (e.g., Neihart, Reis, Robinson, & Moon, 2002;

Richardson & Benbow, 1990; Robinson, 2004), parents and teachers often express concerns about accelerated students' social interactions and relations with their - older- classmates. Conceivably, factors other than accelerated students' actual social behavior may be at work in determining their social status in a group.

Only a few studies are reported in the literature that examined the social status or peer interactions of accelerated students. Richardson and Benbow (1990) asked adults at the ages of 18 and 23 to indicate on a five-point scale the degree to which their acceleration in elementary or secondary school affected their ability to get along with age mates, mental peers, adults, and their social life. According to Richardson and Benbow, these self-reports indicated that acceleration had no effect on their social interactions. Sayler and Brookshire (1993) also asked for self-reports on peer relations in their study of accelerated students, students in gifted classes and students in regular classes, all in 8<sup>th</sup> grade. They found that accelerated students said that peers considered them to be good students more often than students in regular classes did, but less often than students in gifted classes did. Accelerated students reported they were less likely to be seen as troublemakers by their peers than regular students did. Accelerated students reported being seen as popular, athletic, and important by their peers equally often as the students in regular classes, but not as often as the students in gifted classes. These findings corroborate with a narrative description of the school histories of five radically (three grades or more) accelerated children by Gross (1992), who observed that these children were well-accepted by their peers and had close and productive social relationships.

Remarkably, the studies on peer relations and social status of accelerated children we just discussed are all based on accelerated students' self-reports, measuring how accelerated students think others perceive them. Because these studies reflect only the accelerated student's perspective on social interactions, they provide one-sided insight into accelerated students' social relations. These self-



reports remain silent on how peers actually perceive accelerated students. In fact, as Saylor and Brookshire (1993) noted, such self-reports are more indicative of students' self-concept than of their social status among peers. One methodology that reflects peers' perceptions of the social status of an individual is the sociometric method.

Sociometric methods are widely used and approved tools to measure children's social status among peers (Jiang & Cillessen, 2005). This methodology uses sociometric questions to measure a person's status in the peer group using procedures for peer nomination or peer rating (for more details, see Jiang and Cillessen, 2005; Newcomb, Bukowski, and Pattee, 1993). In the classic two-dimensional peer nomination approach, each child in a classroom is asked to nominate peers whom he or she likes most or least. A child's sociometric status is calculated by counting the nominations he or she received, and can be further classified into different sociometric status groups (see Table 4.1 and Method Section for details on the classification procedures). In one frequently used sociometric variant, four continuous dimensions of social status are obtained: acceptance (reflecting a child's attractiveness to peers via the number of positive nominations), rejection (reflecting a child's negative nominations), social preference (reflecting the relative extent to which children are liked or disliked), and social impact (reflecting social salience, or the relative degree to which children are noticed by their peers). A second, related, variant emphasizes the type of social status children may hold in their peer group and classifies children into one of five different sociometric status groups: popular, rejected, neglected, controversial, or average. By definition, popular children are frequently nominated as liked most and are rarely disliked by their peers. Rejected children are infrequently nominated as liked most but are frequently nominated as liked least. Neglected children are infrequently nominated as liked most but are also not disliked by their peers. Controversial children are both frequently nominated as liked most and as liked least. Finally, average children are those who do not fit into one of the four extreme status groups.

Newcomb et al. (1993) performed a meta-analysis to evaluate behavioral differences among groups of children who have been categorized into these five socio-metric status groups. They found that popular, rejected, neglected, and controversial children, when compared to average children, had distinct behavioral repertoires that influenced the quality of their social relations. Popular children demonstrated higher levels of sociability (e.g., positive social actions, positive traits, friendship skills) and lower levels of aggressive (e.g., disruptive, negative) behavior and withdrawal (e.g., loneliness). In contrast, rejected children demonstrated less sociable, more aggressive, and more withdrawn (i.e., depressive and anxious) behavior. The neglected children showed only a few, and small, behavioral differences from the average children: they showed somewhat less aggressive and less sociable behavior. Finally, the controversial children demonstrated higher levels of aggressive behavior (like the rejected children), but also higher levels of sociable behavior (like the popular children).

The sociometric method has been successfully applied to gain insight into the social status of exceptional children, including students with disabilities (e.g., Ochoa & Olivarez, 1995; Sale & Carey, 1995), children with autism (e.g., Campbell, Ferguson, Herzinger, Jackson, & Marino, 2005) or academically gifted children (Farmer & Rodkin, 1996; Norman, Ramsay, Roberts, & Martray, 2000). However, to our knowledge, this methodology has not been applied to examine accelerated students' social status among peers.

#### *Acceleration in the Netherlands*

Children in the Netherlands enter Kindergarten at age four. Kindergarten (spanning two years) is obligatory and is integrated with primary school (spanning six years). If they do not repeat years or accelerate, after six years of primary school, students enter secondary school, typically at the age of 12. They can enter different levels of schooling, depending on the advice given by primary school. Many primary schools examine their students with a national test in the last grade of primary school. Early entrance in Kindergarten is not allowed in the Netherlands. Early entrance in grade

one (i.e., first year of primary school) and acceleration throughout primary school are allowed. Most schools do not have a strict policy concerning the acceleration of students. Whether or not a student is accelerated depends on teachers' opinions ("I should not know what to do else") or the parents' request (but only if school teachers and school management agree). Since recently, more and more schools are using an acceleration scale (Hoogeveen, van Hell, & Verhoeven, 2003), an instrument that helps in making the decision to accelerate a student or not.

In this study, we did not address the question whether it is advantageous for gifted students to accelerate, despite the importance of that question (see Hoogeveen, van Hell, & Verhoeven, in preparation, in which we address this question). Rather, in this study we examined the effects of acceleration in primary school on the development of self-concept and social status in secondary school of students in the Netherlands. Following a longitudinal design, we examined the self-concept and social status among peers of accelerated (probably gifted) students in comparison with their non-accelerated classmates. To the best of our knowledge, accelerated students' self-concept has not been studied in combination with their social status among peers. Moreover, the longitudinal set-up of our study on accelerated students' self-concept and social status will provide insight into the social and emotional consequences of acceleration over an extended period of time.

## **Method**

### *Participants*

Using data from the Center for the Study of Giftedness (CBO) of the Radboud University Nijmegen, and putting calls in magazines for parents of gifted children, we traced accelerated children in their last year of primary school (US: 6<sup>th</sup> grade) and asked their parents for cooperation. The future secondary schools of the participating children were also asked for cooperation. We do not have evidence that the decision to accelerated these students was due to recognition of their giftedness, but, generally speaking, Dutch students are only accelerated if they

perform very well in school or after their giftedness has been officially diagnosed. In the following school year, questionnaires were sent to these schools in the first and the last month of the academic year, to be filled in by students in the first year of secondary school (US: 7<sup>th</sup> grade). A total of 998 students (of which 131 (13.10%) had been accelerated), who together attended 36 first classes of 30 Dutch secondary schools, filled in the questionnaires. Students who did not reach the age of 12 on the 1<sup>st</sup> of October in their first year of secondary school were considered as accelerated students. To enlarge the accelerated group we not only included the students we had initially selected, but also their accelerated classmates. One year after the second measurement, we approached the same schools, asking for their cooperation once more. The accelerated students of the first two measurements and their classmates, who were now in the last month of the second year (US: 8<sup>th</sup> grade), completed the same questionnaires once again. A total of 357 students filled in the questionnaires at all three measurement moments. This group of 357 students was comparable to the first group of 998 students in terms of school type and gender. The data reported in this paper are from these 357 students, who together attended 20 first classes of 18 Dutch secondary schools, in 17 towns and cities, spread over the Netherlands. Classrooms size varied from 17 to 31 students ( $M = 27.10$ ,  $SD = 3.67$ ). The amount of accelerated students in a class varied from 1 to 5 ( $M = 2.60$ ,  $SD = 1.50$ ), in percentages from 3.33% to 18.53% ( $M = 9.73$ ,  $SD = 5.34$ ). Fifty-three students (31 boys and 22 girls) had been academically accelerated during primary school. Eleven of them (7 boys, 4 girls) accelerated more than once. The total amount of accelerants in the final dataset (participants who filled in questionnaires all three times) was 14.85% of the participants, so the response rate for accelerated students was comparable to the response rate in the complete dataset at the first measurement, which was 13.10%. The mean age of the accelerated students at the first measurement was 11 years; 5 months ( $SD = .50$ ; Range: 9 years; 8 months to 12 years; 0 months). The mean age of the non-accelerated students (162 boys, 141 girls) at the first measurement was 12 years; 7 months ( $SD = .31$ ; Range: 12 years; 0 months to 13 years; 10 months).

### *Materials*

*Self-concept.* The Dutch translation (Peters, 1998) of the SDQ-II (Marsh, 1990) was used to measure the self-concept of the participants. The SDQ-II is based on Shavelson et al.'s multi-faced self-concept model (Shavelson et al., 1976). The instrument consists of 102 statements (like "I often need help in mathematics"). Students give their answer on a six-point scale (false, mostly false, more false than true, more true than false, mostly true, true; Marsh, 1990). Half the items are negatively worded to prevent positive response biases. The SDQ-II comprises 11 subscales, listed in Appendix A, and each scale is measured by 8 to 10 items. A higher score on a subscale represents a more positive self-concept. The summed score of the subscales indicates the total score (Marsh, 1990). Reliability of the different scales of the SDQ-II as measured by Cronbach's alpha varies from .83 to .91. The validity is also proved to be high (Marsh, 1990). The reliability of the different scales of the Dutch translation of the SDQ-II is comparable to that of the original version, with Cronbach's alpha ranging from .73 to .90 (Peters, 1998). In this study we concentrate on the Total Self-concept, the subscales General Self-concept, Academic Self-concept (Mathematic, Verbal and School), Social Self-concept (Same sex relations, Opposite sex relations) and Physical Self-concept (Physical Abilities, Physical Appearance).

*Social status and reputations.* We used the classic sociometric technique advanced by Coie, Dodge, and Coppotelli (1982) and Coie and Dodge (1983). We asked each student to name three classmates whom he or she likes most and then to name three classmates whom he or she likes least.

In addition to the sociometric questions, the questionnaire contained ten behavior-reputation-descriptions (see Appendix C) as constructed by Van Boxtel (1992), based on a much longer list of Coie, Dodge and Coppotelli (1982). Van Boxtel (1992) used discriminating capacity as the most important criterion in selecting the items. Items were formulated positive or negative. For each behavior description students were asked to nominate three of their classmates who fitted best with the given description.

### *Procedure*

Participation of schools implied that the accelerated student and all his or her classmates would complete two questionnaires in September and in June of the following year. A year later, the participating schools were asked again to let the same students, who were now at the end of their second year of secondary school, fill in the same two questionnaires.

Thirty Dutch secondary schools responded positively. These schools received letters, addressed to the parents of the participating students. Parents who did not want their child to participate, were asked to report this to the coordinator in the school, to exclude these children from the investigation.

In September, the first month of the Dutch academic year, the SDQ-II and the Sociometric Questionnaire were sent to the participating schools, with instructions for the teacher who handed out the questionnaires. These teachers decided when, yet in the month September or October, the questionnaires were handed out to the students. The two questionnaires were filled in one after another, during one lesson. In June, the last month of the academic year, the same questionnaires were filled in. The third time the students filled in the questionnaires was a year later, when they were at the end of the second year at secondary school.

### *Scoring*

SDQ-data were scored according to the 11 scales presented by Marsh (1990). One-way analyses of variance were conducted on the perceived raw scale scores to determine whether significant variations occurred among the different classes. Separate ANOVAs on each of the self-concept scores revealed significant differences on different dimensions. Consequently, the self-concept scores were standardized by class.

The sociometric questions were analyzed on item-level. Acceptance scores were obtained by counting the number of times a student was positively nominated (liked most) by class-mates and standardizing the resulting scores in the reference group (class). Likewise, rejection scores were obtained by counting the number of

times a student was negatively nominated (liked least). Behavior-reputation scores were obtained by counting the number of times a student was nominated as representative for a particular behavior-reputation. These scores were also standardized within the reference group (class). We used Coie et al.'s (1982) standard score approach and standardized by class by converting the Acceptance and Rejection scores into Z-scores for each class. Social impact and social preference were derived from these acceptance and rejection scores. Social impact is the standardized sum of acceptance plus rejection (Social impact =  $z\text{Acceptance} + z\text{Rejection}$ ), Social preference is the standardized difference of acceptance minus rejection (Social Preference =  $z\text{Acceptance} - z\text{Rejection}$ ).

These dimensions were used to assign the students to one of the five sociometric status groups: popular, rejected, neglected, controversial, average (Coie et al., 1982; Coie & Dodge, 1983). The specific criteria for classification, using Coie and Dodge's (1983) standard score approach, are presented in Table 4.1.

*Table 4.1: Criteria of the Five Sociometric Status Types*

Status type	Criteria
Popular	$z\text{Preference} > 1$ and $z\text{Acceptance} > 0$ and $z\text{Rejection} < 0$
Rejected	$z\text{Preference} < -1$ and $z\text{Acceptance} < 0$ and $z\text{Rejection} > 0$
Ignored	$z\text{Impact} < -1$ and $z\text{Acceptance} < 0$ and $z\text{Rejection} < 0$
Controversial	$z\text{Impact} > 1$ and $z\text{Acceptance} > 0$ and $z\text{Rejection} > 0$
Average	$-1 < z\text{Impact} < 1$ and $-1 < z\text{Preference} < 1$ [all children that do not fit one of the four extreme status groups]

Multivariate analyses were used to investigate self-concept, social status and behavior reputation of accelerated students in their first and second year of secondary school, taking gender into account, and to compare them to non-accelerated students.

### Results

Repeated-measures ANOVAs with acceleration (accelerated or non-accelerated) and gender (male or female) as between-subjects factors and time of measurement (beginning and end of the first year, and end of the second year in secondary school) as the repeated measure were carried out on the self-concept, social status and behavioral reputation data. Because of the relatively small number of accelerants who accelerated two grades or more (11 students), we did not differentiate between students who accelerated one grade or more grades.

#### *Self-concept*

Table 4.2 presents the self-concept data, i.e., the eight SDQ-II subscales we focused on in this study and the total self-concept, at the three measurement times.

*Table 4.2: Means and Standard Deviations of Self-concept of Accelerated and Non-accelerated Boys and Girls at the Beginning (T1) and End (T2) of First Grade and at the End of Second Grade (T3) of Secondary School*

Self-concept	Accelerated				Non-Accelerated			
	Boys (n=18)		Girls (n=13)		Boys (n=91)		Girls (n=94)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Academic Self-concept								
Mathematics								
T1	.70	.54	.31	.80	.26	.98	-.28	.99
T2	.86	.60	.08	1.27	.09	.92	-.10	.94
T3	.79	.77	-.06	1.12	.00	1.05	-.12	.96
Verbal abilities								
T1	-.02	.88	.28	.68	-.06	.97	.12	1.09
T2	-.04	.96	.21	.90	-.01	.90	.15	1.12
T3	-.07	1.29	.51	.65	.06	.94	.09	.86



Self-concept and social status of accelerated students in the first two years of secondary school

School								
T1	.52	.79	.55	.72	.20	.94	.06	.88
T2	.51	1.06	.39	.62	.21	.85	.04	1.01
T3	.14	1.09	.48	.51	.08	.87	-.03	.89
Physical Self-concept								
Physical appearance								
T1	-.33	1.29	.06	1.19	.16	1.01	-.09	.88
T2	-.13	1.29	-.11	.90	.20	.97	-.10	.89
T3	.12	1.07	-.01	.63	.32	.93	-.07	.83
Physical abilities								
T1	.05	.85	-.11	1.16	.14	.96	-.14	.98
T2	-.10	1.04	-.40	1.09	.19	.88	-.19	.98
T3	-.06	1.05	-.20	1.10	.20	1.01	-.15	.99
Social Self-concept								
Same-sex relations								
T1	-.51	1.37	-.42	1.60	.02	1.02	.13	.87
T2	-.49	1.48	-.36	1.27	.04	.94	.24	.77
T3	-.64	1.04	.04	.76	.20	.75	.16	.69
Opposite-sex relations								
T1	-.32	.91	-.31	1.05	-.09	1.05	.10	.90
T2	-.10	.95	-.18	.86	-.01	1.02	.11	.92
T3	-.31	1.04	.12	.95	.24	1.04	.06	.90
General Self-concept								
T1	.01	.85	.06	.98	.06	.95	.09	.96
T2	.29	1.16	-.25	1.08	.11	.92	.02	.99
T3	.25	1.12	.07	.87	.33	.77	-.03	.85
Total Self-concept								
T1	-.02	1.00	.06	1.06	.13	1.01	.00	.91
T2	.18	1.11	-.27	.77	.21	.96	.02	.96
T3	.10	.72	.13	.58	.22	.70	.04	.61

Total self-concept<sup>1</sup>.

The three-way interaction effect between acceleration, gender, and time of measurement was not significant. The two-way interaction effect between gender and time of measurement was marginally significant ( $F(2,197) = 2.51, p = .08, \eta^2 = .03$ ). Table 4.2 shows that the total self-concept of boys increased between the first and second measurement, whereas the total self-concept of girls increased between the second and third measurement (Test of within-subjects contrast, level 2 vs. level 1:  $F(1,198) = 3.55, p = .06, \eta^2 = .02$ ).

The remaining interaction effects and the main effects were not significant.

General self-concept.

No significant main or interaction effects were found for General Self-concept (all  $p$ 's > .10).

Academic self-concept.

We analyzed the following academic self-concept scales: Mathematics, Verbal abilities, and School. Main effects of acceleration were significant for the scales *Mathematics* ( $F(1,207) = 8.59, p = .004, \text{partial } \eta^2 = .04$ ) and *School* ( $F(1,202) = 5.29, p = .022, \text{partial } \eta^2 = .03$ ). Accelerated students appeared to have a more positive self-concept concerning Mathematics ( $M = .49, SD = .78$ ) and School ( $M = .43, SD = .69$ ) than non-accelerated students ( $M_{\text{math}} = -.03, SD_{\text{math}} = .84, M_{\text{school}} = .09, SD_{\text{school}} = .74$ ). For the Verbal self-concept scale, no significant main effect of acceleration was found ( $p > .05$ ).

The main effect of gender was significant for the *Mathematical* self-concept ( $F(1,207) = 8.83, p = .003, \text{partial } \eta^2 = .04$ ), indicating that boys' *Mathematical* self-concept was more positive ( $M = .23, SD = .82$ ) than that of girls ( $M = -.13, SD = .84$ ). For the other academic self-concept scales, no significant main effects of gender or time of measurement were found.

The analysis on the *Mathematical* self-concept yielded a three-way interaction between time of measurement, acceleration and gender ( $F(2,206) = 2.87, p = .059, \text{partial } \eta^2 = .03$ ). Accelerated boys and girls both showed a more

positive Mathematical self-concept than non-accelerated boys and girls at the beginning of their first year in secondary school. The difference between accelerated and non-accelerated boys remained substantial up to the end of the second year. In contrast, the Mathematical self-concept of the accelerated girls approached that of the non-accelerated girls at the end of the first year and the second year (Test of within-subjects contrasts: level 2 vs. level 1:  $F(1,207) = 5.02$ ,  $p = .026$ , partial  $\eta^2 = .02$ ).

The remaining interactions concerning the Academic self-concept scales were not significant (all  $p$ 's  $> .10$ ).

#### Social self-concept.

We analyzed the social self-concept scales Same-sex relations and Opposite-sex relations. Main effects of acceleration were significant for the SDQ-scale *Same-sex relations* ( $F(1,201) = 6.88$ ,  $p = .001$ , partial  $\eta^2 = .06$ ). Accelerated students appeared to have a less positive self-concept concerning *Same-sex relations* ( $M = -.41$ ,  $SD = 1.12$ ) than non-accelerated students ( $M = .13$ ,  $SD = .69$ ). For the self-concept concerning *Opposite-sex relations*, no significant main effect of acceleration (nor of gender or of time of administration) was found ( $p > .10$ ).

The main effect of acceleration on Same-sex relations was qualified by a significant three-way interaction between time of measurement, acceleration, and gender ( $F(2,200) = 3.89$ ,  $p = .022$ , partial  $\eta^2 = .04$ ). The self-concept concerning Same-sex relations of accelerated boys and girls was lower than that of their non-accelerated peers at the beginning and end of their first year in secondary school. For boys, this difference was even larger at the end of the second year. Interestingly, the self-concept of accelerated girls considerably increased at the end of the second year, and was no longer different from that of the non-accelerated girls (Test of within-subjects contrasts: level 3 vs. previous:  $F(1,201) = 6.73$ ,  $p = .010$ , partial  $\eta^2 = .03$ ).

A significant three way interaction between time of measurement, acceleration and gender was also found for *Opposite-sex relations* ( $F(2,206) =$

3.48,  $p = .033$ , partial  $\eta^2 = .03$ ), with a similar pattern as that observed in Same-sex Relations. As can be seen in Table 2, at the beginning and the end of the first year in secondary school, both accelerated boys and girls had a lower self-concept for Opposite-sex Relations than their non-accelerated peers. A difference between accelerated boys and girls emerged at the end of the second year: The self-concept of accelerated boys was considerably lower than that of non-accelerated boys, whereas the self-concept of accelerated girls had increased and was no longer different from that of non-accelerated girls at the end of the second year (Test of within-subjects contrasts: level 3 vs. previous:  $F(1,207) = 6.74$ ,  $p = .010$ , partial  $\eta^2 = .03$ ).

#### Physical self-concept.

We analyzed the self-concept scales Physical appearance and Physical abilities. No significant main or interaction effects were found.

#### *Social Status*

##### Social status categories

Students were divided into sociometric status groups (popular, rejected, neglected, controversial, and average) following Coie and Dodge's (1983) standard score approach (See Table 4.1). Chi square tests indicated significant differences in the percentages of accelerated and non-accelerated students in the different status groups at all three times of measurements ( $\chi^2(4)_{T1} = 20.70$ ,  $p < .001$ ;  $\chi^2(4)_{T2} = 19.44$ ,  $p < .01$ ;  $\chi^2(4)_{T3} = 16.84$ ,  $p < .01$ ). As can be seen in Figure 4.1, the largest difference between accelerated and non-accelerated students can be found in the rejected status group: accelerated students are relatively more often represented in the rejected group than non-accelerated students.

Because of the low numbers of accelerated students in some of the status groups (*popular, rejected, neglected, controversial, and average*), it was not realistic to execute statistical analyses on these data, and we therefore decided to

carry out further analyses on the acceptance, rejection, social impact, and social preference categories.

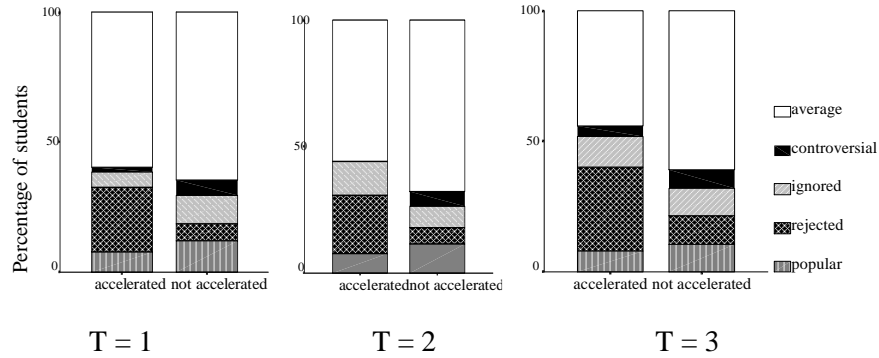


Figure 4.1: Percentages of accelerated and non accelerated students in the different status groups at T = 1, T = 2 and T = 3.

Acceptance vs. rejection

Table 4.3 presents the social status data, i.e., the acceptance, rejection, social impact and social preference of accelerated and non-accelerated students.

Table 4.3: Means and Standard Deviation of Acceptance, Rejection, Social Impact and Social Preference Nominations of Accelerated and Non-accelerated Boys and Girls at the beginning (T1) and end (T2) of First Grade and at the end of Second Grade (T3) of Secondary School

	Accelerated				Non-Accelerated			
	Boys (n=27)		Girls (n=17)		Boys (n=140)		Girls (n=125)	
	M	SD	M	SD	M	SD	M	SD
Acceptance								
T1	-.28	.81	-.44	.71	.16	1.01	.14	1.00
T2	-.40	.74	-.45	1.04	.15	1.07	.10	.81
T3	-.54	.92	-.16	1.11	.02	1.02	.20	.94

Rejection								
T1	.46	1.33	.38	1.38	-.02	.83	-.37	.66
T2	.47	1.51	.25	1.05	.03	.89	-.35	.54
T3	.79	1.68	.27	1.13	.10	1.04	-.17	.82
Social impact								
T1	.32	1.16	.11	1.19	.08	.89	-.29	.77
T2	.25	1.38	-.07	.83	.14	.92	-.27	.71
T3	.55	1.57	.05	1.08	.12	1.08	-.04	.83
Social preference								
T1	-.47	1.27	-.46	1.23	.08	.87	.36	.76
T2	-.57	1.37	-.40	1.09	.05	.96	.33	.60
T3	-.88	1.56	-.25	1.11	-.06	1.01	.22	.84

Main effects of acceleration were significant for *acceptance* (number of 'liked most' nominations) ( $F(1,305) = 15.98, p < .001$ , partial  $\eta^2 = .05$ ) as well as for *rejection* (number of 'liked least' nominations) ( $F(1,304) = 19.33, p < .001$ , partial  $\eta^2 = .06$ ). Accelerated students were 'liked most' less often ( $M = -.39, SD = .74$ ) than non-accelerated students ( $M = .127, SD = .764$ ). Also, they were 'liked least' more often ( $M = .47, SD = 1.25$ ) than non-accelerated students ( $M = -.12, SD = .68$ ).

The main effect of gender was significant for *rejection* ( $F(1,304) = 5.51, p = .020$ , partial  $\eta^2 = .02$ ), but not for *acceptance* ( $p > .10$ ): Boys were 'liked least' more often ( $M = .13, SD = .90$ ) than girls ( $M = -.23, SD = .65$ ).

For both acceptance and rejection, none of the three- or two-way interactions were significant (all  $p$ 's  $> .10$ ).

### Social impact

As explained in the method-section, *Social Impact* is the sum of the (standardized) acceptance and the (standardized) rejection score ( $z\text{Acceptance} + z\text{Rejection}$ ).

The main effect of acceleration was significant ( $F(1,303) = 3.85, p = .051, \eta^2 = .01$ ). Accelerated students appeared to have higher social impact scores ( $M = .20, SD = .12$ ) than non-accelerated students ( $M = -.04, SD = .10$ ). The main effect of gender was significant ( $F(1,303) = 6.95, p = .009, \text{partial } \eta^2 = .02$ ): Boys had more social impact ( $M = .24, SD = .08$ ) than girls ( $M = -.08, SD = .10$ ).

None of the three- or two-way interaction effects were statistically significant (all  $p$ 's  $> .10$ ).

### Social preference

As explained in the Method section, *Social Preference* is the difference between the (standardized) acceptance and the (standardized) rejection score ( $z\text{Acceptance} - z\text{Rejection}$ ).

The main effect of acceleration was significant ( $F(1,303) = 25.72, p < .001, \text{partial } \eta^2 = .08$ ). Accelerated students were preferred less often ( $M = -.53, SD = 1.17$ ) than non-accelerated students ( $M = .15, SD = .72$ ). A main effect for gender was also found ( $F(1,303) = 4.38, p = .037, \eta^2 = .01$ ): Girls were preferred more often ( $M = .22, SD = .70$ ) than boys ( $M = -.09, SD = .91$ ).

No three- or two-way interactions were statistically significant (all  $p$ 's  $> .10$ ).

### Behavior reputations

Main effects for acceleration were found for the behavior reputations *Cooperative* ( $F(1,305) = 18.31, p < .001, \text{partial } \eta^2 = .06$ ), *Humorous* ( $F(1,305) = 9.97, p = .002, \text{partial } \eta^2 = .03$ ), *Helpful* ( $F(1,305) = 16.79, p < .001, \text{partial } \eta^2 = .05$ ), *Leader* ( $F(1,302) = 7.95, p = .005, \text{partial } \eta^2 = .03$ ), *Conceited* ( $F(1,304) = 42.04, p < .001, \text{partial } \eta^2 = .12$ ), and the *Social reputation* ( $F(1,305) = 5.55, p = .019, \text{partial } \eta^2 = .02$ ) (see Table 4.4 for an overview of the results). Table 4.4 shows that accelerated students, compared to non-accelerated students, were nominated more frequently as *Conceited*, and less frequently as *Cooperative*, *Humorous*, *Helpful*, *Leading* and *Social*.

The main effect of gender was statistically significant for the reputations *Humorous* ( $F(1,305) = 4.65, p = .032, \text{partial } \eta^2 = .02$ ), *Helpful* ( $F(1,305) = 17.82, p < .001, \text{partial } \eta^2 = .06$ ), and *Conceited* ( $F(1,304) = 5.55, p = .019, \text{partial } \eta^2 = .02$ ), and was marginally significant for *Social reputation* ( $F(1,305) = 3.05, p = .082, \text{partial } \eta^2 = .01$ ). Table 4.4 shows that boys, compared to girls, were nominated more frequently as *Humorous* and *Conceited*, while girls were nominated more frequently as *Helpful* and somewhat more frequently as *Social*.

The two-way interaction between acceleration and gender was significant for the *Social reputation* ( $F(1,305) = 4.86, p = .028, \text{partial } \eta^2 = .02$ ) and was marginally significant for reputation of being a *Leader* ( $F(1,302) = 3.24, p = .073, \text{partial } \eta^2 = .01$ ). Table 4.4 shows that accelerated and non-accelerated girls had about the same number of nominations concerning being *Social*, whereas accelerated boys received this nomination far less frequently than non-accelerated boys. Moreover, accelerated boys were nominated less frequently for the reputation of being a *Leader* than accelerated girls, whereas non-accelerated boys were nominated for being a *Leader* more frequently than non-accelerated girls.

The two-way interaction between gender and time of measurement was significant for the reputation of being a *Leader* ( $F(2,301) = 3.33, p = .037, \text{partial } \eta^2 = .02$ ). Contrast tests indicated a significant difference between the third time of measurement and the previous ones ( $F(1,302) = 5.78, p = .017, \text{partial } \eta^2 = .02$ ). Table 4.4 shows that the number of nominations of being a *Leader* for boys increased over time. For girls, there was an increase between the beginning and the end of their first year in secondary school. At the end of their second year, however, the number of nominations decreased below the level of the first measurement at the beginning of the first year.

The three-way interaction between acceleration, gender, and time of measurement was not significant for any of the reputations (all  $p$ 's  $> .10$ ).



*Table 4.4: Means and Standard Deviation of Behavior Reputations of Accelerated and Non-accelerated Boys and Girls at the Beginning (T1) and End (T2) of First Grade and at the End of Second Grade (T3) of Secondary School*

Behavior reputations	Accelerated				Non-Accelerated			
	Boys (n=27)		Girls (n=17)		Boys (n=140)		Girls (n=125)	
	M	SD	M	SD	M	SD	M	SD
Cooperative								
T1	-.36	1.08	-.46	.82	.09	.94	.29	1.00
T2	-.41	.73	-.34	1.17	.10	.95	.25	.93
T3	-.63	.72	-.16	1.18	-.07	.98	.23	.98
Boasting								
T1	-.05	.75	-.08	.90	.16	1.09	-.35	.56
T2	-.04	.80	-.05	.65	.20	1.11	-.27	.67
T3	-.04	.62	.29	1.11	.22	1.13	-.20	.81
Humorous								
T1	-.39	.60	-.62	.50	.35	1.16	-.19	.72
T2	-.15	.90	-.20	.88	.30	1.08	-.14	.76
T3	-.37	.90	-.35	.79	.25	1.13	-.18	.77
Starts fights								
T1	.11	1.07	-.03	1.16	.11	.92	-.43	.45
T2	.07	.92	-.08	1.12	.19	1.02	-.41	.32
T3	.14	1.02	.27	1.44	.40	1.12	-.43	.44
Helpful								
T1	-.35	.91	-.16	.86	-.06	.88	.44	1.05
T2	-.66	.55	-.13	1.07	-.09	.85	.50	1.02
T3	-.61	.72	-.03	1.08	-.21	.88	.44	.97
Disruptive								
T1	.20	1.21	.34	1.31	.02	.96	-.35	.63
T2	.13	1.12	-.05	1.18	.13	1.04	-.24	.66
T3	.37	1.14	.64	1.30	.19	1.07	-.20	.86
Leader								
T1	-.55	.37	-.26	.45	.15	1.03	-.10	.93
T2	-.45	.26	.00	.98	.21	1.15	-.04	.77
T3	-.21	.78	-.41	.60	.26	1.08	-.12	.81
Conceited								
T1	.86	1.60	.87	1.63	.07	.92	-.33	.68
T2	.88	1.74	.42	1.27	-.07	.79	-.21	.59
T3	1.08	1.78	.21	.68	-.11	.91	-.08	.81
Social								
T1	-.18	.81	-.21	.89	.15	.97	.08	1.06
T2	-.56	.60	.18	1.02	.09	1.00	.12	1.03
T3	-.51	.80	.17	1.22	.11	1.01	-.02	.95
Help seeking								
T1	.05	.97	-.11	.73	-.19	.79	-.02	1.03
T2	.07	1.25	.33	1.31	-.20	.78	-.11	.91
T3	.18	1.14	.31	.98	.00	.90	.01	1.07

### **Discussion**

In the study reported in this paper, which is part of an ongoing and more extensive research project on acceleration in gifted education in the Netherlands, we compared accelerated students in Dutch schools with their non-accelerated classmates in the first two years of secondary school, focusing on their self-concept, social status and behavioral reputation.

As expected, no difference was found in the general self-concept and total self-concept of accelerated and non-accelerated students. We did find some differences (albeit small) on specific self-concept scales. As for the academic self-concept, accelerated students have a more positive self-concept concerning their mathematical abilities and school in general. Considering the social self-concept, however, accelerated students show a more negative self-concept concerning same-sex relations than their non-accelerated peers. Especially accelerated boys maintain this more negative self-concept up until the end of their second year in secondary school, and also show, unlike the accelerated girls, a more negative self-concept concerning opposite-sex relations. The accelerated girls' social self-concept was lower than that of non-accelerated girls in their first year of secondary school, but at the end of the second year the social self-concepts of accelerated and non-accelerated girls were no longer different. A possible explanation for this gender difference could be that puberty starts earlier for girls than for boys, for many girls when they are still in primary school. So in secondary school (which, in the Netherlands, children normally enter at age 12), the visible (physical and social) differences between accelerated boys and their non-accelerated classmates will be larger and will last longer than the differences between accelerated girls and their classmates. Marsh (1987) and Marsh and Hau (2003) showed how the Big-Fish-Little-Pond-Effect (BFLPE) causes lower academic self-concepts of gifted students participating in a special gifted education program. If we apply the BFLPE to accelerated students, accelerated students, being in class with older students, will

compare their social behavior with older and more mature students. This may lead to a lower social self-concept (at least during the period in which these differences are most notable). Following this reasoning, we can also expect, as Hoge and Renzulli (1991) found, a lower physical self-concept of the accelerated students, especially the boys. The data indeed suggest that accelerated boys have a lower physical self-concept than non-accelerated boys. However, their physical self-concept does not significantly deviate from non-accelerants.

The lack of differences we observed between accelerated and non-accelerated students in their total and general self-concept and the accelerated students' more positive self-concept concerning school and mathematics, are in line with what other researchers found (see, e.g., Swiatek and Benbow, 1991).

The (null) hypothesis that there would be no differences between the social status and reputations of accelerated and non-accelerated students had to be rejected. Differences were found, although the effect sizes were small to medium. Accelerated students are mentioned less often as "most liked" and more often as "least liked" classmates. They are significantly less socially preferred compared to their non-accelerated classmates and they are over-represented in the rejected group. Their behavioral reputations are also less positive: they are seen as less cooperative, humoristic, helpful, leading or social, and as more conceited. With regard to the accelerated students' reputation concerning social behavior, we found a gender difference. Accelerated girls do not differ in their reputation concerning social behavior from non-accelerated girls. This contrasts with the accelerated boys, whose reputation concerning social behavior is lower than that of non-accelerated boys, as well as the accelerated and non-accelerated girls. According to Kerr (2000), gifted adolescent girls focus their intelligence and creativity on socially accepted themes, "... become social experts, working their peer group in such a way as to increase their status and popularity ..." (p. 654), which could explain this phenomenon. Unfortunately, this does not seem to lead to a general positive social status; despite the fact the accelerated girls' reputation concerning social behavior

does not differ from that of their non-accelerated female classmates, they are, as discussed earlier, nominated less frequently as 'liked most' classmate when compared with the non-accelerated girls. More specifically, Table 4.3 indicates that accelerated girls have a relatively low acceptance score, a high rejection score and a low social preference score compared to non-accelerated girls. This difference seems particularly notable in the first year of secondary school, although interactions with the factor time of measurement did not reach statistical significance.

The negative findings concerning the negative social status of accelerated boys and girls seem to contradict findings in the literature about accelerated students, in which almost no evidence is found that they have social emotional problems. In the Introduction we already mentioned that previous studies on peer relations and social status of accelerated children were all based on accelerated students' self-reports, measuring how accelerated students think (or report they think) others perceive them. The findings of this study suggest that the way peers actually perceive accelerated students is more negative than accelerated students think or (want to) report us.

Most researchers in the field seem to assume that intellectually advanced children are also socially and emotionally advanced (e.g., Neihart, Reis, Robinson, and Moon, 2002; Richardson and Benbow, 1990) and acceleration could provide a means to align both intellectual as well as social and emotional development to the mental rather than to the chronological age of gifted students. We should consider the possibility that we rely too much on self-reports assuming this. Despite indications that intellectually advanced children are also socially and emotionally advanced, and that, consequently, accelerated gifted students are social-emotionally equal to their older classmates, those classmates still seem to consider them as outsiders. Consequently, they do reject their accelerated classmates more often, and do not consider them as preferred classmates, but rather as persons that are little

cooperative, humoristic, helpful, leading or social, and more conceited than the average student is.

Besides the possible bias of self-reports, the number of empirical studies concerning social-emotional competence of accelerated students is limited, even more so for the European situation. The majority of studies on social and emotional implications of acceleration have been performed in the USA (the work of Gross is a marked exception). This is remarkable, since academic acceleration is an educational intervention used in many countries, including countries in Europe. Moreover, the findings of North-American studies do not necessarily generalize to other countries. First of all, the US has a much longer tradition of gifted education, including acceleration, than other countries, and this also holds for the country the current study was performed, the Netherlands. Furthermore, because countries differ in their educational system, policy and philosophy, the findings obtained in one country may to some extent reflect educational specificities of this particular country.

In any case, the relatively high percentage of rejected accelerated students in this study is alarming. Data of Newcomb et al.'s (1993) meta-analysis (not on accelerated children) shows that rejected children are at risk in their social development. They show higher levels of negative behavior, higher levels of withdrawal (depression, anxiety), and lower levels of social behavior (less social interactions, less positive social interactions and traits, less friendship skills) (see also Asher and Coie, 1990).

Assuming that accelerated students are not less socially competent (Galloway & Porath, 1997; Gross, 2000), their generally low social status and behavior reputations suggest that some other factor(s) exert(s) an influence. One such factor could be prejudiced attitudes of peers and teachers. In an earlier study (Hoogeveen, van Hell & Verhoeven, 2005), we found that the general attitude of secondary school teachers concerning accelerated students is not accurate and rather

negative. Cornell (1990) also mentions prejudicial attitudes in the classroom or school as a possible cause for unpopularity.

The relationship between acceleration, self-concept, social status and other factors like giftedness and possible prejudicial attitudes are complex, depending on situations and circumstance (Dodge & Feldman, 1990). Research focusing on these interactions will be necessary to fully understand why accelerated and non-accelerated students judge themselves and each other the way they do. The indications of a time effect on self-concept differences between accelerated and non-accelerated boys and girls asks for a longer lasting longitudinal approach as we currently undertake (Hoogeveen & van Hell, 2006). It is also important to take into account at what moment a student has accelerated (was it an early entrance in first grade or skipping grades at the end of primary school?) and on what grounds. At this moment, most Dutch school do not seem to have any policy concerning the acceleration of students, what entails the risk of accelerating the 'wrong' students, and not accelerating those students who would need it.

Proctor, Black and Feldhusen (1986) state that the appropriateness of a research design depends on the question being asked. In this study we were concerned with whether young students who had been accelerated in primary school are, in comparison with their older classmates, functioning well social-emotionally, as expressed in their self-concepts and social status. Results from the study of Hoogeveen, van Hell, and Verhoeven (submitted / see Chapter 5) in which children of equal ability, half of whom have been accelerated, are compared, indicate that there are no statistically significant differences in the social functioning of the two groups. This strengthens the suggestion that it is not acceleration per se that causes differences between accelerated and non-accelerated students, but other factor(s).

Until more research has been done, we should take into account that accelerated students in their first two years of secondary school have a more negative social status than their classmates. To abolish acceleration will not be the solution: too many studies indicate the benefits (Colangelo, Assouline, & Gross,

2004) and other studies (Southern & Jones, 1991-b) as well as experiences with clients in the Center for the Study of Giftedness<sup>2</sup> show the negative consequences of not accelerating. Apart from aiming to inform teachers about giftedness and acceleration, which will lead to a more realistic attitude toward accelerated students (see also Hoogeveen, van Hell, & Verhoeven, 2005), there should be more attention for the social emotional development of the young accelerated students and their classmates. Teachers should be alert for existing prejudices among students and aim for an accepting, tolerating climate in the classroom.





## SOCIAL-EMOTIONAL CHARACTERISTICS OF GIFTED ACCELERATED AND NON- ACCELERATED STUDENTS\*

*In this study, social-emotional characteristics of accelerated gifted students in the Netherlands were examined in relation to personal and environmental factors. Self-concept and social contacts of accelerated (n = 148) and non-accelerated (n = 55) gifted students were measured using a questionnaire and a diary, and parents of these students evaluated their behavioral characteristics. Gender and birth order were studied as personal factors and grade, classroom, teachers' gender, teaching experience and the quality of parent-school contact as environmental factors. The results showed minimal differences in the social-emotional characteristics of accelerated and non-accelerated gifted students. The few differences we found favored the accelerated students. We also found that multiple grade skipping does not have negative effects on social-emotional characteristics, and that long-term effects of acceleration tend to be positive. As regards the possible modulation of personal and environmental factors, we merely found an impact of such factors in the non-accelerated group.*

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\* This Chapter has been submitted for publication

## **Introduction**

Gifted students often learn faster than their classmates. For that reason, teachers and parents sometimes decide to academically accelerate a child, for example, by skipping a grade. Many parents and teachers, however, do not feel very comfortable to take this measure, and worry about the social-emotional consequences (Hoogeveen, van Hell & Verhoeven, 2005 / Chapter 3). In this article, we report on a study that examined social-emotional characteristics of gifted accelerated and gifted non-accelerated students in the Netherlands.

Giftedness is defined and conceptualized in many ways (Colangelo & Davis, 2003). In 1978, Renzulli presented his “three-ring conception” which suggests that at least three traits or factors involve gifted achievement: (1) above average ability, (2) task commitment, and (3) creativity. Gagné (2003) put forward a more differentiated model of giftedness and talent, defining gifts as untrained natural abilities that can develop into measurable talents via learning and practice. According to Gagné (2003), the transformation from gifts to talents involves three types of catalysts, which positively or negatively impact learning: intrapersonal factors (e.g., physical, motivational, and personality factors), environmental factors (e.g., persons, events, and one’s social milieu), and chance. Sternberg (2002) introduced the concept of successful intelligence, for which analytical, creative, and practical thinking must be in balance. All models of giftedness have in common that they consider intelligence to be a crucial factor (Feldhusen & Jarwan, 2000; Gagné, 1993; 2000; 2003; Heller, 1990; 1991; Renzulli, 1978; Sternberg, 2002; Ziegler & Heller, 2000). Apart from intelligence, other factors, like intrapersonal characteristics (e.g., motivation, stress) and environmental conditions (e.g., quality of teaching, family), are considered to be conditional for the manifestation of gifted behavior. Nowadays, most researchers agree that giftedness is a multidimensional concept (Feldhusen & Jarwan, 2000; Gagné, 1993; 2000; Heller, 1990; 1991; Ziegler & Heller, 2000). Consistent with this idea, highly intelligent students need to have appropriate intrapersonal characteristics and environmental conditions in order to express their talents in performance.

The educational program that is offered can be considered as an important environmental condition that affects students' performance. One specific educational adjustment in gifted education is academic acceleration. There are many forms of academic acceleration (see, e.g., Rogers & Kimpston, 1992; Southern & Jones, 2004; Southern, Jones, & Stanley, 1993). Most common forms of acceleration are grade skipping, early entrance, or telescoping curriculum, which all imply that after acceleration the student is younger than her or his classmates (Mönks & Pflüger, 2005).

Although acceleration is the most frequently applied educational intervention for gifted students, teachers and parents worry about the social emotional development of accelerated students (Hoogeveen, van Hell, & Verhoeven, 2005 (Chapter 3 in this thesis); Southern, Jones, & Fiscus, 1989). These worries are supported by some empirical studies, but not by all (for a review, see Kulik, 2004). Some studies on the effects of acceleration on students' social-emotional performance found no or small negative effects (Cornell, Callahan, & Loyd, 1991; Robinson & Janos, 1996), whereas other studies reported positive effects (Ingersoll & Cornell, 1995; Janos & Robinson, 1985; Saylor & Brookshire, 1993).

Definitions of social performance are diverse. Dodge (1985) states that many definitions include the frequency and quality of interaction with other people as a measure of social performance. Other researchers consider the presence or absence of behavioral problems as a measure of social performance (Deater-Deckard, & Dunn, 2002; Pilowsky, Yirmiya, Doppelt, Gross-Tsur, & Shalev, 2004). Regarding the social performance of gifted students, Gallagher (2003) lists two conflicting views. One view suggests that gifted students are more at risk for adjustment problems (Hollingworth, 1942; Janos & Robinson, 1985). The other view suggests that gifted children are better adjusted than their non-gifted peers (Baker, 1995; Freeman, 1983). Gallagher (2003) observes that most authors in the field agree that, when the circumstances are favorable, there is little difference in emotional adjustment between gifted and non-gifted students, but that some

intrapersonal and environmental factors might cause social-emotional problems in gifted students, that do not have that effect on non-gifted students. An educational environment, not adapted for gifted students, can be such a factor (Gross, 2000).

Kulik (2004) described the effect sizes of 13 studies on social and emotional effects of acceleration. Three studies investigated participation in school activities as a measure of social performance and concluded that accelerated students participate in school activities to nearly the same extent as non-accelerated students do. Gross (1992) concluded, based on the results of her study of 40 extremely gifted students (IQ 160 – 200), that accelerated students have closer and more productive social relationships than non-accelerated students.

The outcomes of studies on social-emotional consequences of acceleration can at best be called inconclusive. A possible explanation for these divergent findings can be found in students' intrapersonal characteristics and environmental conditions, other than the educational program that is offered, that influence students' social emotional performance.

An influential intrapersonal characteristic that affects students' (social) performance is their self-concept (Comer, Haynes, Hamilton-Lee, Boger, & Rollock, 1987; Marsh, Chessor, Craven & Roche, 1995; Sayler & Brookshire, 1993). Several studies found that self-concept is an important predictor of the school performance of gifted students (Bell & McCallum, 1995; Castellanos Simons, 2001; Marsh & Yeung, 1998, Swann, Chang-Schneider, & McClarty, 2007). Sayler and Brookshire (1993) investigated eight-grade students and compared accelerated students with students in gifted classes and students in regular classes. They found that accelerated students and students in gifted classes had more positive self-concepts than students in regular classes. Positive results of acceleration were also found by Gross (1992, 1996) in two longitudinal studies in which she compared accelerated and non-accelerated gifted children. However, in a 10-year longitudinal study, Swiatek and Benbow (1991) found no differences in self-concept between accelerated and non-accelerated students. The different findings of the above studies may be related to different definitions and

measurements of self-concept. Swiatek and Benbow (1991) and Sayler and Brookshire (1993), for example, used a one-dimensional, more general self-esteem scale, with questions like 'I take a positive attitude toward myself' (Swiatek & Benbow, 1991, p.531). Gross (1992; 1996), on the other hand, used a multi-dimensional instrument. She found that the academic self-concept of accelerants was less positive than the very positive academic self-concept of non-accelerants. The accelerants' social self-concept, however, was more positive than that of accelerants. In our study, we will use the Self-Description Questionnaire as developed by Marsh (1990), in order to measure self-concept in the different domains.

Students' behavior profile can be seen as another intrapersonal characteristics and possible predictor of students' school performance (Betts & Neihart, 1988; Heller, 1991). Betts and Neihart (1988) developed a theoretical model of six profiles of gifted children. The purpose of this model was to differentiate gifted children on the basis of behavior, feelings, and needs. The underlying theory is that gifted children are influenced by their families, their education, their relationships and their personal development. Betts and Neihart (1988), as well as Gagné (1993), Gallagher (2003), Heller (1991), Rimm (2003), and Ziegler and Heller (2000), all agree that non-favorable behavioral characteristics may impede school performance, whereas favorable behavioral characteristics may benefit school performance. Consequently, developing and maintaining favorable behavioral characteristics should be an important goal of education. For our study, we developed a questionnaire for parents, based on Betts & Neihart's (1988) behavioral profiles of gifted and talented students, which measures students' critical attitude, risk avoiding behavior, underground behavior, and social-emotional problems.

Not only intrapersonal, but also environmental factors will influence students' social emotional performance. School-related factors may have an impact. Class size can be seen as a case in point. Studies show positive effects of reduced class size (Finn & Achilles, 1990; 1999; Finn & Pannozzo, 2003; NICHD

Early Child Care Research Network, 2004). Other factors of influence are teachers' experience (Hargreaves, Galton & Pell, 1998) and teachers' gender (Duffy, Warren & Walsh, 2001). Besides school-related environmental conditions, family-related factors appear to be an important factor (see Freeman, 2000). Birth order, for example, seems to affect educational attainment (Gottfried, Gottfried, Bathurst & Guerin, 1994; Simonton, 2000; Travis & Kohli, 1995), favoring first born children. Also the relation between parents and school can be of influence. Various studies have indicated that a high-quality parent-school contact positively affects the performance of students (Biernian, 1996; Eccles & Harold, 1993; 1996; Finn, 1998; Stevenson & Baker, 1987).

In the studies of acceleration conducted so far a multidimensional perspective has largely been neglected. No attempt has been made to relate social-emotional characteristics of accelerated vs. non-accelerated students in perspective of environmental factors.

The purpose of the present study was to arrive at a better understanding of the effect of academic acceleration on social-emotional characteristics of gifted students in the Netherlands. The focal question was how the school intervention 'acceleration' (in interaction with other environmental and personal conditions) is related to social-emotional characteristics of gifted students. Therefore, the self-concept, behavioral profiles (critical attitude, risk avoiding behavior, underground behavior, and social-emotional adjustment) and social contacts of accelerated and non-accelerated students aged 4 to 27 was examined in relation to personal and environmental factors, like family (birth order) and school conditions (class size, teachers' gender and experience). The accelerants skipped one or more grades, were early entrants, or went through grades faster than usual (telescoping curriculum).

Based on earlier research we expected that, in general, accelerated students would show a more positive behavior profile, better social-emotional adjustment, and more social contacts than non-accelerated students. Concerning the self-concept, we expected that the academic self-concept of accelerated students is less positive and that the non-academic self-concept is equal or more positive than that

of non-accelerants. This expectation is based on the presumption that gifted accelerated students will compare their academic achievements with older students; the difference in academic achievement between accelerants and older students will be smaller than that between accelerants and same-age peers. Marsh (1987) extensively studied this phenomenon of social comparison in gifted classes, and refers to it as the Big-Fish-Little-Pond-Effect (BFLPE). We also expected that personal and environmental factors interact with acceleration and explored to what extent these factors will differentially affect accelerated and non-accelerated students.

## Method

### *Participants*

Data were collected from 203 children, adolescents and young adults, aged 4 to 27 (boys: 136, of which 94 accelerated; girls: 67, of which 54 accelerated), and their parents and teachers. Hundred and twenty children were primary school students, 74 were secondary school<sup>1</sup> students and nine went to university. The mean age of the accelerated and non-accelerated participants was 11.22 years ( $SD = 2.99$ ), and 12.67 years ( $SD = 4.27$ ), respectively. All participants had been diagnosed to be gifted by psychologists of the Center for the Study of Giftedness.

One hundred and seventy one participants filled in the Self Description Questionnaire (SDQ) (boys: 112, of which 88 accelerated; girls: 59, of which 47 accelerated; age:  $M = 11.58$ ,  $SD = 3.31$ ) (see Table 5.1). Parents of 170 participants filled in a questionnaire, based on Betts and Neihart's (1988) profiles of gifted children, and some open questions about school and parent-school contact. Teachers of 150 participants provided information about class-size and teacher's age ( $M = 40.93$ ,  $SD = 8.90$ ), gender (male: 72; female: 77) and teaching experience. One hundred and thirty seven participants filled in a diary for one week in September (boys: 94, of which 63 accelerated, girls: 43, of which 33 accelerated, age:  $M = 11.29$ ,  $SD = 3.16$ ).

Table 5.1: Number (and Percentages) of Participants in Each Age Group who Completed the SDQ, Parent Questionnaire and Diary

	SDQ		Parent questionnaire		Diary	
	Accelerated	Non accelerated	Accelerated	Non accelerated	Accelerated	Non accelerated
< 10 years	47 (38)	13 (29)	47 (37)	13 (32)	38 (40)	13 (32)
10-17 years	73 (58)	27 (59)	77 (61)	26 (63)	55 (57)	24 (58)
> 17 years	5 (4)	6 (13)	2 (2)	2 (5)	3 (3)	4 (10)

### Materials

Questionnaires and a diary were used to measure self-concept, behavior profile, and social performance.

*Self-concept.* The SDQ (Marsh, 1988; 1990; 1992; Peters, 1998) was used to measure self-concept. For the youngest children (younger than 10), a Dutch translation of the SDQ-I (Marsh, 1988) was used. Children between 10 and 17 years old filled in the Dutch translation of the SDQ-II (Peters, 1998). Participants older than 17 filled in a Dutch translation of the SDQ-III (Marsh, 1992). The SDQ is based on the model of Shavelson, Hubner and Stanton (1976), as described earlier. The SDQ-I, SDQ-II, and SDQ-III consist of 76, 102, and 136 statements, respectively. Non-academic and academic self-concept (See Appendix D), derived from the Shavelson model, and a General-Self-Concept scale, derived from the Rosenberg self-esteem scale, are assessed. These different scales reflect a child's or adolescent's self-ratings in various areas of self-concept. The validity of the SDQ proved to be high (Marsh, 1988; 1990). The reliability of the scales of the SDQ-I, SDQ-II and SDQ-III, as measured in this study, ranged from .80 to .90, from .81 to .91 and from .79 to .97, respectively.

*Behavioral profiles.* Based on the profiles of the gifted and talented (Betts & Neihart, 1988), we constructed a questionnaire. Parents were asked to indicate to



what extent 40 behavior characteristics, like 'perfectionism', 'mood swings' or 'isolation', were applicable to their child, with five possible answers: 'very applicable', 'applicable', 'sometimes applicable', 'hardly applicable' or 'not applicable'. In order to distinguish different scales in this questionnaire, factor analyses were executed, which yielded four social-emotional behavioral scales: Critical attitude, Underground behavior, Risk-avoiding behavior and Social-emotional problems (see Appendix E). Reliabilities of the four scales were .76, .64, .89 and .76, respectively.

*Social contacts.* To gain insight into participants' social contacts, two diaries were constructed. The first one consisted of 10 pages (one front page, two pages each for Saturday and Sunday, two page for every other day of the week). Every page contained a table, with rows indicating the hours from 3 p.m. until 9 p.m. for weekdays, and 9.00 a.m. to 9.00 p.m. for Saturday and Sunday. The columns indicated the person(s) the participant was with at that hour, the age(s) of that person(s), and the activity engaged in. On the basis of the persons and activities filled in by the subjects in June, the diary for October was constructed in a multiple choice form: Subjects were asked to mark, for every hour, if they were alone or with (a) particular person(s), like 'parent', 'older brother', 'younger friend', and in which activities, like 'watching television', 'making homework', they were involved. The social contacts mentioned in this diary were used in the analyses of this study.

*Environmental factors.* Parents were asked to answer questions concerning the contact between parents and school (Is there any contact between parents and school? yes/no. If yes, how do you experience the contact). Teachers provided information about their gender, age, teaching experience and classroom size.

#### *Procedure*

A letter was sent to the parents of children that had been examined by qualified psychologists from the Center of the Study of Giftedness (Radboud University Nijmegen). Participants older than 18 received the letter themselves. The letter explained the study and asked for cooperation. It also contained a form asking for

information about the school career and the school the participant was attending at this moment. In June, all persons who were willing to participate received the diary, a SDQ (I, II, or III, depending on the participant's age), and the parent questionnaire. A comparable questionnaire was sent to the participant's teacher. In September of the same year, the second diary was sent.

The scale scores of the three different questionnaires of the SDQ were standardized, in order to integrate the data of the three age-groups (e.g., the variable mathematical self-concept contained z-scores from all three SDQ-scales). Only scales measured in all three versions of the SDQ were included in the analyses, implying that the scales 'problem solving', 'spiritual self-concept' (SDQ-III), 'honesty', and 'emotional stability' (SDQ-II and SDQ-III) were left out. The average of the same and opposite sex relations scores of students who filled in the SDQ-II and SDQ-III was considered as the variable peer relations, which could be taken together with the SDQ-I scale peer relations. Because we considered the difference between same and opposite sex relations important for participants older than 10 years old, we analyzed the data again for the group of students, older than 10 years, who filled in the SDQ-II or III (discerning same and opposite sex relations).

To measure social contacts, we calculated how many times a parent, peer, or sibling was mentioned in the diary. Scores were summed as a total amount of contact, regardless with whom the participant was in contact. Subsequently, percentages were calculated for every person with whom the participant had interacted, using the following calculation: percentage contact with a particular person (e.g., parent) = hours of contact with a particular person (e.g., parent) / total hours of contact \* 100. For the variable reflecting the time a participant was alone, the actual amount of hours was used in the analyses.

Students' behavioral characteristics were assessed by one of their parents, using the questionnaire based on Betts and Neihart's (1988) distinction of six profiles. In order to distinguish different scales in this behavioral questionnaire, factor analyses were executed, which were described earlier.

## Results

### *Statistical analyses*

For each of the factors self-concept, behavioral profile and social contacts, we performed two analyses. First we performed MANOVA's, with acceleration (accelerated or non-accelerated) as the between-subjects factor. In subsequent analyses, we explored whether social-emotional characteristics and performance were modulated by effects of acceleration and personal or environmental factors. To answer this question, the data were analyzed by a series of two-factor MANOVAs with acceleration (accelerated, non-accelerated) as one independent variable, and either students' gender (male, female), birth order (first born, not first born), grade (grade 1-3, grade 4-6, secondary school), classroom size (less than 25 students, 25 or more students), teachers' experience (1-9 years, 10-21 years, more than 21 years), teachers' gender (male, female), or parents' assessment of quality of parent-school contact (bad, average, good) as the second independent variable on each of the dependent variables (self-concept, behavioral profile and social contacts). An alpha level of .10 was used for all statistical tests.

### *Self-concept*

MANOVA's were carried out on the nine SDQ scales Mathematics, Verbal, Academic, Physical abilities, Physical appearance, Peer relation, Parent relation, and General self-concept, to test differences in self-concept of accelerated and non-accelerated students. Subsequently, in order to allow for the differentiated peer-relation scales (same-sex-relations and opposite sex relations), MANOVA's were carried out on the 10 SDQ scales Mathematics, Verbal, Academic, Physical abilities, Physical appearance, Same and Opposite Sex relations and Parent relations, to test differences in self-concepts of accelerated and non-accelerated students, older than 10 years. Because the general self-concept is the sum of the differentiated self-concepts, it could not be included in the MANOVA. A t-test was

carried out to test differences in general self-concept of accelerated and non-accelerated students.

Table 5.2 presents the overall results of the *Self-concept* of accelerated and non-accelerated gifted students, based on scores on the nine scales the SDQ-I, II and III have in common, plus the gender-differentiated scales of the SDQ II and III.

Multivariate tests revealed no significant differences between the self-concepts of accelerated and non-accelerated students ( $F(8,162) = 1.61, p = .126$ ;  $F_{age>10}(9,102) = 1.10, p = .367$ ;  $t_{total\ self-concept}(169) = 1.15, p = .251$ ).

No significant two-way interaction effects were found considering *acceleration* and either *student's gender, classroom size, teachers' experience* and *teachers' gender* ( $p > .10$ ).

Table 5.2: Mean Scores and Standard Deviations (SD) on the Self Description Questionnaire of Accelerated and Non Accelerated Gifted Students

<i>SDQ</i>	Accelerated		<i>n</i>	Non-accelerated		<i>n</i>
	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	
Mathematics	.03	1.00	125	-.09	.99	46
Verbal	-.03	1.00	125	.08	.99	46
Academic	.05	1.01	125	-.13	.96	46
Physical abilities	-.06	1.02	125	.17	.90	46
Physical appearance	.09	.92	125	-.25	1.14	46
Same sex relations <sup>1</sup>	.03	.94	79	-.07	1.13	33
Opposite sex relations <sup>1</sup>	.02	.94	79	.04	1.02	33
Peer relations	.00	.87	125	.02	1.04	46
Parent relations	.02	1.02	125	-.04	.94	46
General self-concept	.03	.96	125	-.07	1.09	46
Total self-concept	.05	.87	125	-.14	1.27	46

1: The Same and Opposite sex relations scales were filled in by 79 accelerated and 33 non-accelerated students (age  $\geq 10$ ).

For acceleration and *birth order*, a marginally significant two way interaction effect was found ( $F(9,140) = 1.94, p = .059$ , partial  $\eta^2 = .10$ ). Tests of between subjects revealed a significant difference between accelerated and non-accelerated students concerning Physical appearance. In the accelerated group, first-borns showed a less positive self-concept concerning Physical appearance ( $M = -.02, SD = 1.01$ ) than non first-borns ( $M = .24, SD = .82$ ). In the non-accelerated group, the first-borns showed a more positive self-concept concerning Physical appearance ( $M = -.07, SD = .90$ ), than the non first-borns ( $M = -.57, SD = 1.52$ ). Focusing only on the students older than 10 years, again a marginally significant interaction effect was found ( $F(9,87) = 1.73, p = .094$ , partial  $\eta^2 = .15$ ). Tests of between subjects revealed a significant difference between accelerated and non-accelerated students, older than 10 years, concerning Verbal abilities ( $F(1,99) = 4.24, p = .042$ , partial  $\eta^2 = .04$ ). Accelerated first-borns showed a more positive verbal self-concept ( $M = .15, SD = .97, n = 43$ ) than accelerated non first-borns ( $M = -.35, SD = 1.11, n = 29$ ), whereas non-accelerated first-borns showed a more negative verbal self-concept ( $M = -.13, SD = 1.00, n = 16$ ) than non-accelerated non first-borns ( $M = .33, SD = .78, n = 11$ ). No significant interaction effect for acceleration and *birth order* on the Total self-concept was found.

For acceleration and *grade*, a significant two way interaction effect on self-concepts was found ( $F(16,300) = 1.81, p = .029$ , partial  $\eta^2 = .09$ ). Tests of between subjects revealed a significant difference between accelerated and non-accelerated students concerning Peer contacts, Parent contacts and the General self-concept. Table 5.3 shows that for the accelerated students, the difference between self-concepts in the different grades is small. For the non-accelerant, however, the differences are much larger, with negative self-concepts in grades 4-6 of primary education. For the group of older students ( $> 10$  years), no significant interaction effect of acceleration and grade was found. There was also no significant interaction effect of acceleration with *grade* on Total self-concept.

Table 5.3: Means and Standard Deviations of Self-concept Scales that were Significantly Modulated by the Two-way Interaction of Acceleration and Grade

	Accelerated			Non-accelerated			<i>F</i> (2,151)	<i>p</i>	Partial $\eta^2$
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>			
Peer contacts									
Grade 1-3 p.e.*	-.06	.90	20	.54	.70	11			
Grade 4-6 p.e.	-.09	.87	56	-.52	1.33	16	3.14	.046	.04
Secondary school	.12	.89	45	.28	.69	15			
Parent contacts									
Grade 1-3 p.e.	-.14	1.06	20	.45	.43	11			
Grade 4-6 p.e.	.19	.75	56	-.39	1.22	16	3.30	.039	.04
Secondary school	-.13	1.24	45	-.07	.80	15			
General Self-concept									
Grade 1-3 p.e.	-.04	.87	20	.39	.62	11			
Grade 4-6 p.e.	.10	.86	56	-.56	1.41	16	3.97	.018	.05
Secondary school	-.10	1.13	45	.22	.75	15			

\* p.e. = primary education

No significant interaction effect of acceleration with *quality of parent-school contact* on self-concept was found for the whole group ( $p > .10$ ). The interaction effect of acceleration with *quality of parent-school contact* of students, older than 10 years, was significant ( $F(18,164) = 1.68, p = .048, \text{partial } \eta^2 = .15$ ). Tests of between subjects yielded significant interaction effects on the self-concept scales Verbal abilities, Physical appearance, Same-sex relations, and General self-concept of students older than 10 years. A significant interaction effect of acceleration with *quality of parent-school contact* was also found on the Total self-concept of the whole group. Table 5.4 demonstrates that in the group of older students ( $> 10$  years), the non-accelerants show more variability across the three groups of *quality of school-parents contact* (bad, average, or good) than the

accelerants on the self-concept scales Verbal abilities, Physical appearance, Same-sex relations and General self-concept. In the total group, we see the same phenomenon for the Total self-concept (see Table 5.5). For non-accelerants, there is a clear relation between the *quality of contact between parents and school* and their Self-concept, which is more positive as the parent-school contact is more positive, and more negative as the parent-school contact is more negative. Such a marked relation was not found in the accelerated students.

*Table 5.4: Means and Standard Deviations of Self-concept Scales that were Significantly Modulated by the Two-way Interaction of Acceleration and the Quality of Parent-School Contact in Students older than 10 years (SDQ II and SDQ III)*

	Accelerated			Non-accelerated			<i>F</i> (2.96)	<i>p</i>	Partial $\eta^2$
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>			
Verbal									
Bad/below average	.31	.98	21	-.43	1.04	7			
Average	-.46	1.01	14	.26	.60	9	4.50	.011	.15
Good/very good	-.17	1.09	35	.69	.61	10			
Physical Appearance									
Bad/below average	.38	.69	21	-.72	2.05	7			
Average	.04	.78	14	-.13	.91	9	3.15	.047	.07
Good/very good	-.15	1.01	35	.16	.84	10			
Same-sex Relations									
Bad/below average	.26	.62	21	-1.01	1.77	7			
Average	-.01	.53	14	.02	.87	9	4.49	.014	.09
Good/very good	-.20	1.23	35	.24	.87	10			
General Self-concept									
Bad/below average	.29	.70	21	-.66	1.35	7			
Average	.12	.64	14	.06	.98	9	5.62	.020	.06
Good/very good	-.24	1.24	35	.18	.72	10			

*Table 5.5: Means and Standard Deviations of Total Self-concept Modulated by the Two-way Interaction of Acceleration and the Quality of Parent-School Contact*

	Accelerated			Non-accelerated			<i>F</i> (2,153)	<i>p</i>	Partial $\eta^2$
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>			
Total Self-concept									
Bad/below average	.21	.79	32	-1.02	1.99	11			
Average	.05	.63	26	.06	.95	15	6.86	.001	.09
Good/very good	-.08	1.03	56	.35	.78	13			

*Behavioral profile*

MANOVAs, with acceleration (accelerated or non-accelerated) as the between-subjects factor, were carried out on the questionnaire data to test differences in the behavioral profiles of accelerated and non-accelerated students.

Multivariate tests showed statistically significant differences between accelerated and non-accelerated students ( $F(4,162) = 3.13, p = .016$ , partial  $\eta^2 = .07$ ). Tests of between-subjects revealed that accelerated and non-accelerated students differ in Underground Behavior ( $F(1,167) = 5.65, p = .019$ , partial  $\eta^2 = .03$ ) and Risk-Avoiding Behavior ( $F(1,167) = 5.66, p = .007$ , partial  $\eta^2 = .04$ ). Table 5.6 shows that parents of accelerated students observed less Underground behavior than parents of non-accelerated students, and they labeled their children less often as Risk avoiding than parents of non-accelerated students did.

The Critical Attitude of accelerated students did not differ significantly from that of non-accelerants. The difference between accelerated and non-accelerated students concerning Social-Emotional Problems was not significant either ( $p > .10$ ).



Table 5.6: Mean Scores and Standard Deviations (SD) of Accelerated and Non-accelerated students on Behavioral Profiles

<i>Behavioral Profile</i>	Accelerated ( <i>n</i> = 126)		Non-accelerated ( <i>n</i> = 41)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Critical attitude	3.81	.70	3.61	.68
Underground behavior	2.56	.77	2.90	.93
Risk-avoiding behavior	2.71	.87	3.13	.86
Social-emotional problems	2.35	.63	2.34	.70

No significant two-way interaction effects were found between acceleration and *students' gender, grade, classroom size, teachers' experience, quality of parent-school contact* or *teachers' gender* on the Behavioral Profile ( $p > .10$ ).

For acceleration and *birth order*, a significant two-way interaction effect was found ( $F(4,139) = 2.63, p = .037$ , partial  $\eta^2 = .07$ ). Test of between subjects revealed significant two way interaction effects for students' Critical Attitude ( $F(1,146) = 4.44, p = .037$ , partial  $\eta^2 = .03$ ) and Risk-avoiding Behavior ( $F(1,146) = 4.88, p = .029$ , partial  $\eta^2 = .03$ ). In the accelerated group, first-borns showed a more Critical Attitude ( $M = 3.89, SD = .66$ ) than non-first-borns ( $M = 3.66, SD = .76$ ), whereas in the non-accelerants first-borns showed a less Critical Attitude ( $M = 3.48, SD = .72$ ) than non first-borns ( $M = 3.82, SD = .65$ ). Birth-order did not affect Risk-avoiding behavior in the accelerated students, but in the non-accelerants first-borns ( $M = 3.32, SD = .85$ ) showed more Risk-avoiding behavior than non-first-borns ( $M = 2.64, SD = .76$ ).

#### *Social contacts*

MANOVAs, with acceleration (accelerated or non-accelerated) as the between-subjects factor, were carried out on the diary data to test differences in social contacts of accelerated and non-accelerated students.

Table 5.7 presents the percentage of time spent on *social contacts*, as reported by accelerated and non-accelerated participants in their diary. No main effects of acceleration were found in the time children and adolescents spent with peers, siblings or parents (all  $p$ 's > .10). This implies that the pattern of spending time with peers, siblings, or parents, and the amount of time being alone, was not different for the accelerated and the non-accelerated students.

*Table 5.7: Mean Scores and Standard Deviations (SD) on the Percentage of Time Accelerated and Non Accelerated Gifted Students spent on Social Contacts*

<i>Contact with ...</i>	Accelerated ( $n = 96$ )		Non-accelerated ( $n = 41$ )	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Parent(s)	35.66	20.01	31.19	13.62
Sibling(s)	29.08	17.35	31.60	15.41
Peer(s)	27.87	16.94	32.12	20.48
Being Alone	21.84	9.40	22.71	10.63

No two-way interaction effects were found between *acceleration* and *students' gender, grade, classroom size, teacher's gender and teachers' experience* or *the quality of parent-school contact* on any of the Social contacts measures (all  $p$ 's > .10).

The interaction between acceleration and *birth order* was marginally significant ( $F(3,115) = 2.53, p = .061$ , partial  $\eta^2 = .06$ ). Test of between subjects revealed significant two way interaction effects on the Time spent with Peers ( $F(1, 121) = 7.60, p = .007$ , partial  $\eta^2 = .06$ ). Accelerated first-borns spent more Time with Peers ( $M = 32.26, SD = 18.16$ ) than accelerated non first-borns ( $M = 22.18, SD = 13.77$ ), whereas non-accelerated first-borns spent less Time with Peers ( $M = 28.25, SD = 20.49$ ) than non-accelerated non first-borns ( $M = 38.48, SD = 21.34$ ).

### *Individual variation among accelerants*

Within this group of accelerants ( $n = 148$ ), five students repeated a year at some point after their acceleration, and 25 students were accelerated more than once. The age-difference of the accelerants with the mean age of their classmates thus varied, and ranged from 1 to 18 months. Another factor that varied within the group of accelerants was the time that had expired between the moment of acceleration and the moment they participated in this study, which varied from 1 to 10 years. To examine if the factors *Age-deviation* and *Time expired since the moment of acceleration* were related to the variables of interest in this study, correlational studies were performed with these two variables and *self-concept*, *behavioral profile* and *social contacts*.

Pearson's correlations were calculated between *Age-deviation* (amount of months a student differs from the average age in his/her grade) and *Time expired since the moment of acceleration* on the one hand, and *Self-concept*, *Behavioral profile* and *Social contacts*, on the other hand. Results revealed that 17 out of 21 correlations were not significant.

The correlations that were significant indicated that the younger a student was (*age deviation*), in comparison to her or his classmates, the more time s/he spent with older peers ( $r = .32, p < .001$ ). The results also indicated that as more time had passed since acceleration, accelerants had a more positive self-concept concerning opposite sex relations ( $r = .41, p < .001$ ), showed less risk-avoiding behavior ( $r = -.35, p < .001$ ), spent less time with siblings ( $r = -.35, p < .001$ ), and spent more time with same-age peers ( $r = .32, p < .001$ ).

### **Conclusions and Discussion**

In the present study, we examined how academic acceleration in the Dutch educational system is related to gifted students' self-concept, behavior profile and social contacts and how personal and environmental factors modulate these relations. Our results indicate that acceleration has no notable effect on gifted students' self-concept. Moreover, most two-way interactions between acceleration

and other environmental factors (like family and school conditions) and personal factors on the various self-concept scales were not significant. The interaction effects that were significant, though, indicate that the quality of parent-school contact affects non-accelerants' self-concept, but not the self-concept of accelerants.

Accelerated and non-accelerated gifted students' critical attitude and social-emotional adjustment do not seem to differ. Parents of accelerated students, however, reported less underground and risk-avoiding behavior of their children than parents of non-accelerants. Moreover, the majority of the two-way interaction effects of acceleration and other factors on behavior profiles of students were not significant. Accelerated and non-accelerated gifted students also did not differ in the amount of social contacts. Again, the majority of the two-way interaction effects between acceleration and environmental or personal factors were not significant.

In our study, accelerated students seem to be less susceptible to personal and environmental factors than non-accelerated students. Of course, we can not conclude that acceleration *causes* less susceptibility to personal and environmental factors. It can only be assumed that a more stable personality is *a condition* for teachers and parents to accelerate a student. In their comprehensive survey of research on psychological vulnerability of gifted students, Neihart, Reis, Robins, and Moon (2002) found no evidence that gifted students are more psychologically vulnerable than other students. They did find, however, that unmet needs for academic advancement and compatible peers can cause psychological problems. This may explain the higher susceptibility to external factors of the non-accelerated gifted students in our study and, more specifically, the more negative general self-concepts of non-accelerants in the last three years of primary school in comparison with the first three years of primary school. Possibly, more years in school in which gifted students' needs are not, or not sufficiently, met can lead to a drop in general self-concept.

Furthermore, concerning the family factor birth-order, we did find some opposite effects for accelerated and non-accelerated students. Nowadays researchers stress the complexity of the impact birth-order can have on gifted children's

functioning (see, for example, Simonton, 2000). Because most participants in our study originate from families with two children, and most participants were first-borns, drawing conclusions would be premature. Considering that differences were found, and that family can be considered to be highly important for gifted children (Freeman, 2000), it is important to further examine the role of birth order and other family variables in the social emotional development of accelerated gifted students. The results of such research may help to guide the decision process concerning acceleration and other educational adjustments for gifted students.

Within the group of accelerants, we found that very few emotional characteristics are related with the *difference of age (age deviation)* between the accelerant and her or his classmates and the *time expired since the moment of acceleration*. The few correlations that were significant indicate that skipping more than one grade, resulting in a larger age-difference with classmates, does not negatively affect personality and performance. On the contrary, we found that the younger students are, compared to their classmates, the less underground behavior is observed. In line with findings of other researchers (Gross, 1992; Janos, 1988; Pollins, 1983; Stanley & Benbow, 1983), it can tentatively be concluded that skipping more than one grade may lead to better social functioning.

It is interesting to note that the effects of acceleration tend to be more positive in the case of early accelerants, as reflected in the decrease in risk-avoiding behavior and the increase in self-concept concerning opposite sex relations. Considering the latter factor, we have take into account that students who accelerated a longer time ago, were, in general, older, which often leads to more opposite sex relations. In earlier research, however, we also found that passing time had a positive effect on the self-concept of accelerated students (Hoogeveen & van Hell, 2006). These positive long term effects are also in line with the many studies carried out within the framework of the Study of Mathematically Precocious Youth (SMPY) (Lubinski, 2004). In these studies, the school results of thousands of participants, who experienced different kinds of educational acceleration, were examined for three decades. Summarizing the results of these studies, Lubinski

(2004) concluded that intellectually precocious students who experience educational acceleration in school evaluate their school experiences afterwards as more positive than intellectually precocious peers who were not accelerated.

To conclude, the results of this study strongly suggest that social-emotional characteristics of accelerated gifted students and non-accelerated gifted students are largely similar. These results thus do not support worries expressed by teachers about the acceleration of gifted students (Hoogeveen, van Hell, & Verhoeven, 2005 (Chapter 3 in this thesis); Southern, Jones, & Fiscus, 1989). Our findings parallel the outcomes of earlier studies in the United States (e.g., Robinson, 2004; Southern & Jones, 1991-a), Australia (Gross, 1992; 1996; 2000), and Germany (Heinbokel, 1997). Like in other studies, we found that acceleration does not harm gifted students, not even in the case of multiple grade skipping. On the contrary, there is a suggestion in the data that accelerated students are more socially competent than non-accelerants. The findings in this study can reassure those parents and teachers that worry about the social emotional consequences of acceleration in school; if a student is gifted, acceleration seems to be a sound and, in many cases, appropriate measure in gifted education.

## CONCLUSIONS AND DISCUSSION

This thesis contains four studies on the effects of educational arrangements for gifted students, with a special focus on academic acceleration in Dutch education. Based on a multidimensional dynamic model of giftedness, we studied how and to what extent educational arrangements, in interaction with environmental factors, intrapersonal characteristics and time, affect the performance of gifted students. The preceding chapters have been written as independent articles. In this final chapter, we will not cover all the separate findings of the preceding chapters, but rather discuss some general findings of the studies that were conducted. We start out with a discussion on the findings of our international research. Subsequently, we will go into academic acceleration in the Netherlands. On the basis of the findings of our Dutch studies about acceleration, we will focus on teachers attitudes toward acceleration, on the one hand, and social-emotional consequences of acceleration, on the other hand. In addition, the construct of academic acceleration will be revisited by integrating the different findings from this thesis. Finally, we will come up with suggestions concerning future research and discuss some educational implications from the present thesis.

#### **Effects of educational programs for gifted students**

In Chapter 2 of this thesis, a review of various studies of educational programs for gifted students was reported in order to answer the question what effects different types of programs have on students' social-emotional characteristics and cognitive and social performance. Most of the studies analyzed in Chapter 2 evaluated (in and out of class) enrichment programs in which students gain additional challenging educational experiences (Gallagher, 2003; Moon & Feldhusen, 1995; Rudnitski, 1995; Southern, Jones, & Stanley, 1993). These enrichment programs appeared to start from a broad concept of giftedness, acknowledging creativity, motivation and independence as crucial constructs in the development of giftedness (Van Tassel-Baska, 2000). The enrichment programs discussed in Chapter 2 can be typified as 'within class enrichment', 'pull out programs', 'summer programs', 'gifted classes' and 'gifted schools' (descriptions of these programs can be found in Chapter 2).



We found that almost all types of gifted programs yield positive effects on cognitive and social performance. These positive findings are in line with results of earlier international research [see for example: Rimm and Lovance (1992), Vialle, Ashton, Calon, and Rankin (1997), the meta-analytic studies of Kulik (2004) and the narrative review of Reyero and Tournon (2003)]. An apparently less positive result is the finding that the (composite) self-concept of students who participated in a gifted program was less positive than the self-concept of non-participants. However, after differentiation between the academic and non-academic self-concept, we found interesting differences between different programs. In gifted classes or schools the *academic* self-concept dropped after participation, but there was no or a much smaller decline in *non-academic* self-concept. In pull-out and within-class enrichment programs, the effect on the academic self-concept was small, but the non-academic self-concept of participants dropped. This difference between Gifted Classes and Schools, on the one hand, and pull-out programs and within class enrichment programs, on the other hand, can be explained by referring to the social comparison theory (Festinger, 1954). Festinger argues that people use significant others in their environment as frames of reference in forming self-assessments. Marsh et al. (1995) refer to this phenomenon as the Big-Fish-Little-Pond-Effect: If (highly) gifted students are in a class with non-gifted students, this will lead to a very positive academic self-concept. When they start to attend classes with classmates who are also gifted, they are not uniquely gifted anymore and the academic self-concept may decline. Students from gifted classes and gifted schools compare themselves (academically) with other gifted students, whereas students from pull-out and within class enrichment programs can compare themselves (also) with non-gifted classmates, which explains the less negative effects on the academic self-concept. It appears, however, that the combination of being part of a regular class and participation in a special program, had a negative effect on the non-academic self-concept. This seems to suggest that gifted students feel socially more comfortable in groups of only gifted students than in mixed ability groups.

The decline in academic self-concept in Gifted Schools and Gifted Classes should not necessarily be interpreted as negative. It is negative if students' more negative self-concept is unrealistic. If, however, a student had an unrealistic positive self-concept before participating in a gifted program (for example, thinking she or he is the best of all), and has an adjusted, more realistic self-concept after participation (e.g., because she or he found out that there are other gifted students), this can be considered positive.

More specific research will be necessary to explain the decline of the non-academic self-concept in programs that combine participation in a regular class with participation in a special program (Pull-out and Within Class Enrichment programs). Educators should be trained in taking into account the development of students' self-concept (Delcourt et al., 1994), teaching their students that they should base their self-concept on the development of their own abilities over time (Marsh et al., 1995), and less on the comparison with others. Álvarez (2002) supports this individual-oriented attitude after her observation that students in mixed classes hold back in achieving, in an attempt to not stand out in comparison with their classmates.

In the research review, described in Chapter 2, only two studies of acceleration were included, given the fact we did not find more acceleration studies that met the methodological criteria for inclusion in the analysis. Implications from previous research on acceleration are thus hard to give. Thanks to our own research, the consequences of this particular form of educational adaptation could be explored with reference to gifted students in the Netherlands.

### **Academic acceleration in the Netherlands**

In Chapters 3 to 5, the focus was on grade-based acceleration in Dutch education, in other words, those forms of academic acceleration that imply that the student, after the intervention, is younger than her or his classmates. Participants of the studies accelerated by grade skipping, early entrance or telescoping curriculum. These forms of acceleration are most common in the Netherlands and other European

countries (Mönks & Pflüger, 2005), and, at the same time, cause worries about the social-emotional development of students. In the following paragraphs, we will discuss the effects we found of academic acceleration in Dutch education on gifted students' intrapersonal characteristics and performance. Examples of intrapersonal characteristics are self-concept (Bell & McCallum, 1995; Comer, Haynes, Hamilton-Lee, Boger, & Rollock, 1987; Marsh, et al., 1995; Sayler & Brookshire, 1993), and behavioral characteristics (Betts & Neihart, 1988). We consider these factors as highly indicative of the efficacy of an educational program for gifted students. In this thesis, we differentiated between social adjustment, social status and time spent in social contacts as indications for social performance. Moreover, we studied acceleration effects from different angles. We questioned secondary school teachers who teach accelerated students (Chapter 3), we compared accelerants with their (older and probably non-gifted) classmates (Chapter 4), and we compared accelerated gifted students with non-accelerated gifted students. We also questioned parents of accelerated and non-accelerated gifted students (Chapter 5).

*Teacher attitudes toward accelerated students*

Teachers of secondary schools in the Netherlands express a positive attitude toward cognitive performance of accelerated students (see Chapter 3). Concerning the social-emotional effects of acceleration, they mention positive as well as negative experiences. Teachers appear to be very concerned with the alleged isolation of accelerated students, and also express worries on their social competence. It is striking that those teachers with more experience with accelerated students express even more negative opinions concerning accelerants' emotional problems and social isolation. This might imply that Dutch accelerated students are social-emotionally less competent than their non-Dutch peers. The results reported in Chapter 4 seem to be in line with teachers' opinions about the social competence of students. Does this mean that teachers rightfully worry about the social-emotional development of accelerated students? The results of Chapter 4 will be elaborated in the next section.

The worries about the limited social-emotional competence of accelerated students expressed by the teachers in our study are not in line with international findings about the social functioning of accelerated students. An alternative explanation for teachers' more negative opinions concerning accelerants' emotional problems and social isolation should therefore be considered. Heinbokel (1997), Southern, Jones and Fiscus (1989), and Vialle et al. (1997) assume that teachers' preconceptions and inadequate beliefs on the consequences of acceleration make them see what they expect to see. This may even lead to self-fulfilling prophecies (Brophy & Good, 1974; Jussim, Smith, Madon, & Plumbo, 1998). The statement of one of the teachers in our survey seems to support this: "I am aware that I notice only the accelerated students with problems and not the accelerated students who function well".

Given the fact that teachers' attitudes have influence on the performances of students, this attitude change can make a difference. Teachers with knowledge about giftedness and acceleration are more sensitive to the needs of gifted students; hence, their students are likely to achieve better (Karnes & Whorton, 1996). The provision of information about giftedness and acceleration can change the attitudes of teachers: Following participation in an information meeting, teachers' opinions are more in line with the results of scientific research on the effects of acceleration on social-emotional well-being and academic performance of accelerated students. As we learned from our study, sending written materials to schools, without an information meeting, does not automatically make that the information reaches the teachers. Specific and targeted information on acceleration and giftedness is required to indeed influence teachers' opinions on accelerated students.

### *Social-emotional consequences of acceleration*

In Chapter 4, we found that accelerated students in the first two years of secondary school show a more positive academic self-concept than their classmates. In the light of Festinger's (1954) social comparison theory, it seems that the accelerated students still consider themselves to be cognitively stronger than their classmates.

On the other hand, the social self-concept of accelerated students compared with their classmates was more negative. This indicates that accelerated students feel less confident concerning their social contacts. Our findings concerning the social status of students were also unexpectedly negative for the accelerated group: accelerated students in the first two grades of secondary schools in the Netherlands were comparatively more often represented in the socially rejected group than their non-accelerated class mates. They were less often “liked most” and more often “liked least”, and, consequently, were less socially preferred. Additionally, they were nominated more frequently as conceited, and less frequently as cooperative, humorous, helpful, leading and social. These findings contradict findings in the international literature about accelerated students, in which almost no evidence is found that accelerated students have social-emotional problems. On the contrary, intellectually advanced children seem to be also socially and emotionally advanced (e.g., Neihart, Reis, Robinson, & Moon, 2002; Richardson, & Benbow, 1990), and acceleration should provide a means to align both intellectual as well as social and emotional development to the mental rather than the chronological age of gifted students.

In interpreting the findings, we must take gender differences into account. We found main effects of gender that were expected: boys (accelerated and non-accelerated) show a more positive self-concept concerning mathematics, have more social impact and are more frequently “liked least”, while girls (accelerated and non-accelerated) are more frequently nominated as being helpful and social. Most striking, however, is the finding that accelerated girls increase in both self-concept and social status during the first two years of secondary school. At the end of the second year, the social self-concepts of accelerated and non-accelerated girls are no longer different. Although the social status of girls also increased during the first two years, interactions with the factor time of measurement did not reach statistical significance. The difference between accelerated and non-accelerated boys increased during the first two years of secondary school, to the detriment of the accelerated boys. A possible explanation for this finding is suggested by Kerr

(2000) who proposed that gifted adolescent girls focus their intelligence and creativity on socially accepted themes. Another possible explanation is that girls generally mature earlier than boys, and that by the end of the second year of secondary school most accelerated girls in contrast to accelerated boys, can be seen as physically and social-emotionally adolescents.

In Chapter 5, we described a comparison of accelerated and non-accelerated students, diagnosed to be gifted. The most remarkable finding was that accelerated and non-accelerated gifted students, by and large, do not differ on social-emotional characteristics. What we also found is that accelerated gifted students do seem to be less influenced by external factors than non-accelerated gifted students. This suggests that the accelerants have more stable social-emotional characteristics. Of course, these findings do not prove a causal effect. More likely is that the fact that these students are social-emotionally stable was (one of the) reason(s) to accelerate them. Even so, it appears that the acceleration did not negatively affect this stability.

It is important to note that in the group of accelerants there was a lot of individual variation concerning the amount of grades skipped and the time that expired since the acceleration. A closer look at the influence of these factors makes clear that it is not just acceleration that causes social problems. Our results show that multiple grade skipping does not have negative effects on social emotional characteristics, and that long-term effects of acceleration tend to be positive rather than negative.

#### **Academic acceleration revisited**

In our research, we aimed to empirically test the effects of academic acceleration. When we review the results described in this thesis, we can conclude that teachers have positive experiences and attitudes concerning the cognitive development of accelerated students. On the other hand, they seem to have some ideas about the alleged isolation of accelerated students that seem to be unfounded. However, at

first glance our results on social-emotional consequences of acceleration look inconclusive. The findings reported in Chapter 5 suggest that accelerated gifted students are not more isolated than their non-accelerated gifted peers. The results in Chapter 4, on the other hand, seem to indicate negative consequences of acceleration on social functioning. In order to be able to explain these different outcomes a closer look at the methodological design of the two studies is warranted. What differs in the two studies are the control groups: In Chapter 4, accelerated students were compared with their (older and probably non-gifted) classmates. In Chapter 5, however, the control group consisted of non-accelerated gifted students, and the average age of both groups was equivalent. It might well be the case that the difference in control-groups caused the different findings and that the social problems we found are not caused by acceleration, but by (an)other factor(s) that distinguish(es) the accelerants from their classmates. A factor that applies to all participants in Chapter 5 and the accelerated ones in Chapter 4, is that they are gifted. Although we have no information about the intelligence of the participants in Chapter 4, we explain in that chapter that it is plausible to assume that they are gifted. De Raad (2002) found that teachers think gifted students (if they are accelerated or not) have more social-emotional problems than non-gifted students. This finding supports the possible explanation that teachers' negative attitude is not on acceleration, but on giftedness in general. Following this train of thought, a negative teacher attitude may have affected only the accelerated students in Chapter 4, but all students in Chapter 5. This could explain the differential outcomes on the social-emotional consequences of acceleration from the two studies. Another methodological difference between the two studies is that in Chapter 4 classmates evaluated the social status of the accelerants while the study in Chapter 5 relied on self-reports. It is possible that students think or report to be more positive about their social status than that peers may evaluate.

Furthermore, it should be realized that the moment in the children's school career may influence the outcomes of research. Considering the time factor, we studied students, described in Chapter 4, again in a follow-up study, 4 years later,

when they were in their final (6<sup>th</sup>) year of secondary school (Bekkers, 2005). At that moment, the difference in academic self-concept, favoring the accelerants in their first two years of secondary school, turned out to have disappeared. Also, the difference in non-academic self-concept, disadvantaging the accelerants, had disappeared by the time students were in 6<sup>th</sup> grade. In 6<sup>th</sup> grade, accelerated students showed an even more positive self-concept concerning opposite sex relations than the non-accelerants. The accelerated boys, who in the first two years showed the most negative self-concept concerning opposite sex relations, showed, when they are in 6<sup>th</sup> grade, the most positive self-concept about opposite-sex relations (although not differing significantly from the accelerated girls in 6<sup>th</sup> grade). This change in self-concept supports a multidimensional and dynamic vision on performance; in the first two years of secondary school gender seems to influence the effect of acceleration on the social self-concept: accelerated boys show a much more negative self-concept, comparing themselves with non-accelerated boys, while the difference between accelerated and non-accelerated girls is much smaller by the end of the second year. The fact that no differences were found in the last year of secondary school shows that the self-concept is dynamic; with children's progression of age, differences in social self-concept between accelerated and non-accelerated students tend to disappear.

For practical reasons, it was not possible to study the social status of the students, described in Chapter 4, in their last year of secondary school, as we did with the self-concept. However, Cornell et al. (1990), Boivin and Bégin (1989) and Horowitz (1962) all demonstrated a positive relation between self-concept and social status. We may consider, then, the possibility that the problems we found in the first two grades of secondary school concerning social status will also tend to disappear over the grades. International research clearly indicates the positive long-term effects of acceleration (Brody, Assouline, & Stanley, 1990; Gross, 1992; Ma, 2000; McCluskey, Massey, & Baker, 1997; Stanley, 1985). After a twenty-four year longitudinal study of early entrants in kindergarten, McCluskey et al. (1997)



conclude that one should not give up on acceleration too soon, because placements that initially look like failures may be successful in the long run.

Finally, it is important to emphasize the fact that most studies about academic acceleration are non-European, almost all North American, which makes them less representative for the educational situation in the Netherlands. Gifted education in the United States has a longer history and is more widespread (Freeman, 1999; Southern & Jones, 1991-a) than in the Netherlands, for example, which probably affects people's attitude toward giftedness and gifted education.

### **Future research**

The research reported in this thesis should certainly not be regarded as conclusive. Some questions remained unanswered, and new questions appeared.

Although the studies in this thesis indicate that, as we expected, accelerated students in Dutch education do better than non-accelerated peers in some areas (having a more positive self-concept concerning mathematics and school in general, showing less underground and risk-avoiding behavior), also negative effects of acceleration came to a fore: accelerated students (especially boys) show, at least in the first two years of secondary school, a less positive social self-concept and are not popular among their peers. This finding raises the question whether teachers (and possibly parents and others) are right in their worries about academic acceleration. In a multidimensional dynamic vision on giftedness, we have to consider other possible factors that can explain these findings. One theory is that teachers, who worry about the social-emotional well-being of accelerated students, are simply right. Another theory is that their attitudes are driven by prejudice and that these prejudices, indirectly, contribute to the unpopularity of accelerants. Prejudices, and the concomitant negative expectations, may lead to self-fulfilling prophecies, which implies that teachers' expectations may influence (accelerated) students' performance (Jussim, Smith, Madon, & Palumbo, 1998; Peters, Grager-Loidl, Supplee, 2000). We have to consider the possibility that

Dutch teachers' expectations of accelerated (or gifted) students' social incompetence and emotional problems may make accelerated students act that way, and may also permeate the thinking of non-accelerated classmates. Although such processes are difficult to measure, McCluskey, et al. (1997) found indications that these processes are at work. They mention a typical example of a teacher's warning, written in red on a student's file: "Look out! Early entrance student. Immature!" (p. 29). To find an answer to the problem of possible self-fulfilling prophecies, we suggest future longitudinal intervention studies that preferably cover primary and secondary education, in which the relationships between teachers' attitudes and expectations and gifted students' performance are examined over time. Such research should also include other environmental factors, like the competence and experience of the educator(s), the schools' identification procedures, and the attitudes of peers and parents.

Family factors are environmental factors that also affect the performances of a gifted student (Albert, 1995; Freeman, 2000; Perleth, Schatz & Mönks, 2000). In Chapter 5, we found that birth-order affects the self-concept of gifted students, in particular non-accelerated gifted students. Other family factors that we were not able to involve in these studies, are socio-economic background (Freeman, 2000; Perleth et al., 2000), as well as religion, family-structure, critical events like divorce or death of a family member (Perleth et al.; Peters et al., 2000), or relocation (moving to another town) (Plucker & Yecke, 1999). The attitude of parents concerning learning can be seen as important, as well as the balance between freedom and pressure, support, and the time parents spent with their children (Mönks et al., 2000; Perleth et al., 2000; Peters et al., 2000, Mooij, Hoogeveen, van Hell, & Verhoeven, 2006).

As noted at several points in this thesis, researchers should acknowledge the multidimensionality and dynamics of the process that make gifted students perform in the way they do. Only by including all possible influencing factors, like school and teacher characteristics and family factors, preferably over a longer

period of time, future research will lead to more specific information and tools to improve gifted education.

### **Educational implications**

The results of this thesis pose challenges for teachers, parents, and scientists. Teacher training is essential to prevent underachievement in gifted students (Gross, 1999). Teachers of secondary schools in the Netherlands in our study show a lack of knowledge concerning theories of giftedness (de Raad, 2002). Recent research of Bakker, van Kessel and Sikkes (2008) reconfirms the lack of knowledge about giftedness of (primary and secondary school) teachers; 28% of the teachers indicate that they can recognize gifted students, 27% feel themselves able to help them. Peters et al. (2000) claim that teachers' low expectations for children can encourage underachievement. Self-fulfilling prophecy, perceptual bias and incompatibility of teaching and learning styles of teacher and students may lead to an inadequate image of a student. In Chapter 3, we saw that when teachers' conceptions are changed, their opinions about accelerated students change. Teachers who attend an information meeting and receive written information about giftedness and academic acceleration express more positive opinions about accelerated students' social competence and school achievement and motivation and less negative opinions about emotional problems than before they received the information. Ribich, Barone and Agostino (1998) found evidence that this will positively affect the performance of students.

When teachers gain more knowledge about giftedness this will lead to a better and earlier identification of gifted students. Earlier identification and intervention will prevent later problems for these students. The results of our research review, described in Chapter 2, indicate that schools need a variety of educational adaptations, like in- and out-of class enrichment and acceleration possibilities. This finding is supported by experts in the field (George, Cohn & Stanley, 1979; Mönks, Heller & Passow, 2000; Renzulli, 1992). They argue not to

consider acceleration as *an alternative* of enrichment. Instead of talking in terms of acceleration versus enrichment, we should rather ask the question: “*When* is it more appropriate to alter the tempo or pace of instruction and learning and *when* is it more appropriate to alter the breadth or depth of experience and *how* shall this be accomplished?” (Mönks, et al., 2000, p. 847). Teachers who recognize the gifted students in their classroom, and also recognize that those students need adjusted education, just need the time and the means to teach those students in an effective way. From this vision, educating the gifted will only be possible with support from (local and international) governments to provide schools for teacher training and adequate educational provisions.

A good teacher and an adequate educational program are not enough, however, to support a gifted (accelerated) student. Peters et al. (2000) show the importance of the relationship between gifted children and their parents and mention some risks stemming from family factors, like rejection, or too low or too high expectations. They consider good modeling as the best strategy parents can use. Parents also can offer supplementary activities to their gifted children (Campbell, Wagner, & Walberg, 2000). This might cause tension in parents: wanting to support their child on the one hand, not wanting to be seen as a pushing parent on the other hand. This tension is one of the reasons why organizations of parents of gifted children are so popular (Campbell et al., 2000). Although gifted education has grown in the last decades in the Netherlands, there is still too much ignorance and prejudice against gifted education, gifted students and their parents. This causes unnecessary suffering and a loss of intellectual potential. The challenge, if not the obligation, of scientists, governments, teachers and parents is to cooperate in order to offer optimal education to all students, including the gifted ones.

## NOTES

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### CHAPTER 3.

1. According to the 1998 Dutch law on Primary Education, education is organized in such a way that all pupils can pass through a continuous developmental process. As stated by the Minister of Education “In Dutch primary education the key values are quality, variety and openness. No two children and no two schools are the same. That is why schools want to offer more “tailor-made” education which ties in with the interests and aptitudes of individual children” (Guide for parents, Ministry of Education, 2001, p.2).
2. Combined schools offer (1) pre-vocational secondary education (VMBO), (2) senior general secondary education (HAVO), and (3) pre-university education (VWO). Gymnasia offer pre-university education, including the classical languages Latin and/or Greek.
3. Calls were published in magazines for parents of gifted children and letters were sent to parents of children that had been examined in the Center for the Study of Giftedness.
4. Because a considerable number of teachers marked their response between scale numbers, the five-point scale was transformed into a nine-point scale in the analyses.
5. Schools from which teachers did not return both questionnaires were excluded.

## CHAPTER 4.

1. The total self-concept is the sum of all self-concept scales of the SDQ-II, while the general self-concept is one of the scales of the SDQ-II, presenting more general self-concept statements.
2. The Center for the Study of Giftedness (CBO) is part of the Radboud University Nijmegen (the Netherlands). Activities are the assessment of (gifted) children and adolescents, counseling parents, teachers and social workers, offering classes for gifted children, teacher training [in cooperation with the European Council for High Ability (ECHA)] and scientific research on giftedness and education.

## CHAPTER 5.

1. Children in the Netherlands start primary school at the age of 4, and in the standard curriculum children enter secondary school at the age of 12. The first and second year of secondary school in the Netherlands can, considering the age of the students, be compared with the 8<sup>th</sup> and 9<sup>th</sup> grade of American secondary school.

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## APPENDICES

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### **Appendix A. Questions and Statements of Questionnaires.**

The original questionnaires are in Dutch. This appendix lists the translated items.

#### *4 Questions of Questionnaire*

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1. Do you think a special approach of gifted children is advisable (answer options: always, sometimes, never).
  2. Do you think acceleration in primary school is a useful option in gifted-child education? (answer options: always, sometimes, never)
  3. Do you have experience with one or more accelerated students? (answer options: yes, no, unknown).
  4. Your experiences with these accelerated students were ... (answer options: very positive, positive, negative, very negative).
- 

#### *31 Statements of Questionnaire*

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1. Acceleration leads to adjustment problems.
2. Social-emotional problems of gifted children occur in a group with age-mates and less so in a group with older children.
3. Acceleration leads to better motivation in gifted students.
4. Acceleration has a negative influence on self-confidence.
5. Acceleration prevents (mental) laziness.
6. Acceleration is a good alternative for enrichment.

7. Acceleration has a positive influence on social-emotional functioning.
8. Acceleration has a negative influence on cognitive development.
9. The risk for problems in secondary school is larger for non-accelerated gifted students than for accelerated gifted students.
10. Children should under no circumstances start school before the age of 4.
11. To not accelerate a gifted student in primary school leads to problems in secondary school.
12. Acceleration is a bad form of intervention in the education of a gifted student.
13. Acceleration leads to good achievement in school.
14. Gifted students are less happy after acceleration.
15. Gifted students function better socially after acceleration.
16. Gifted students function less well emotionally after acceleration.
17. Gifted students have more self-confidence after acceleration.
18. Acceleration is no solution for underachievement.
19. Accelerated students have better social relationships.
20. Accelerated students show more behavioral problems than non-accelerated students.
21. Accelerated students feel socially isolated.
22. Accelerated students do not have more emotional problems than non-accelerated students.
23. Acceleration is an adequate intervention for the development of a gifted student.
24. Accelerated students are less accepted than non-accelerated students.
25. The self-concept of accelerated gifted students is equal to or more positive than the self-concept of non-accelerated gifted students.
26. It is difficult for an accelerated student to be the youngest in class, as well as the smartest.
27. Students of an 'older' class will not accept an accelerated student.
28. An accelerated student will run into problems in puberty, because other students are more 'ahead'.
29. An accelerated student will be less independent than is expected of students in his/her grade.
30. An accelerated student will end up in an unusual position because of his/her younger

age.

31. By accelerating a student the child is pressured too much to achieve.

---

*Additional questions of 2<sup>nd</sup> questionnaire, related to intervention*

---

1. Did an information meeting, within the framework of giftedness and acceleration, take place at your school? (answer options: yes, no, unknown).
  2. If yes, did you participate in this meeting? (answer options: yes, no, unknown)
  3. If yes, this meeting was ... (answer options: very informative, informative, barely informative, not informative).
  4. Did you read the written information that was handed out during the meeting: (answer options: yes, no, unknown).
  5. If yes, the written information was ... (answer options: very informative, informative, barely informative, not informative).
  6. Did you receive written information within the framework of this investigation about giftedness and acceleration? (answer options: yes, no, unknown)
  7. If yes, did you read this information? (answer options: yes, no, unknown).
  8. If yes, the written information was ... (answer options: very informative, informative, barely informative, not informative).
- 

Questions 6-8 were presented to teachers of schools where no meeting took place.

**Appendix B. Subscales and examples of items of the SDQ-II**

Scale	example item
Physical Abilities	I enjoy things like sports, gym and dance. (+)
Physical Appearance	Nobody thinks that I'm good looking. (-)
Opposite-Sex Relations	I have lots of friends of the opposite sex. (+)
Same-Sex Relations	I have few friends of the same sex as myself. (-)
Parent Relations	I get along well with my parents. (+)
Honesty- Trustworthiness	I sometimes tell lies to stay out of trouble. (-)
Emotional Stability	I am usually relaxed. (+)
Math	I often need help in mathematics. (-)
Verbal	I look forward to Dutch classes. (+)
General School	I get bad marks in most school subjects. (-)
General Self	Overall, I have a lot to be proud of. (+)



**Appendix C: Behavior-reputation-questions of the questionnaire**

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1. There are classmates you like to have in your group. Those classmates are nice and do things with other classmates. You can trust these classmates: they take good into consideration what others want.
  2. There are classmates who show of a lot about themselves, or they try to attract attention.
  3. There are classmates who have a good sense of humor and who can stand a joke themselves. In general they are in a good mood and stay calm, also when things do not go as they had expected.
  4. There are classmates who are quarrelsome. They say mean things to other classmates or push or hit other classmates.
  5. There are classmates to whom you can go if you need help or if you are troubled by something. They are nice classmates who really are interested in your feelings.
  6. Some classmates mess up everything if they are in a group. They never want to share, do not take into consideration the others and always want to have it their way.
  7. There are classmates, who others choose as their leader. The other classmates like it when these leaders indicate what has to be done.
  8. Some classmates prefer not to participate with the others. They are arrogant, isolate themselves and pretend to be better than others.
  9. Some classmates prefer to be with others than being alone. In general they participate with the rest of the class.
  10. Some classmates always want somebody else to help them. They want help before they tried hard themselves.
-

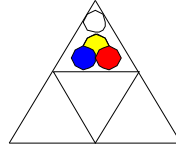
**Appendix D. Subscales and example items in the SDQ** (Marsh, 1988; 1990;1992)

Subscales	Example item
Physical Abilities	I am good in sports (SDQ-I)
	I can run a long way without stopping (SDQ-II)
	I am a good athlete (SDQ-III)
Physical Appearance	Other kids think I am good looking (SDQ-I)
	I am ugly (SDQ-II / III)
Same and Opposite-sex Relations Scale	I get along with kids easily (SDQ-I)
Parent Relations	I have lots of friends of the opposite sex (SDQ-II / III)
	My parents like me (SDQ-I)
	My parents really love me a lot (SDQ-II)
Reading / Verbal	My values are similar to those of my parents (SDQ-III)
	I like reading (SDQ-I)
	I get good marks in Dutch (SDQ-II)
Mathematics	I have a poor vocabulary (SDQ-III)
	I get good marks in mathematics (SDQ-I)
	I hate mathematics (SDQ-II)
General-School	I am quite good at mathematics (SDQ-III)
	I look forward to all school subjects (SDQ-I)
	I have trouble with most school subjects (SDQ-II)
General-Self Scale	I learn quickly in most academic subjects (SDQ-III)
	When I do something, I do it well (SDQ-I)
	I can do things as well as most people (SDQ-II)
	Overall, I have a lot of respect for myself (SDQ-III)

**Appendix E: Scales and items of the behavioral checklist for parents**

<p>Scale 1: Critical attitude</p>	<p>Corrects teacher Questions rules Stands up for convictions Prefers discussion Criticizes others Is direct</p>
<p>Scale 2: Underground behavior</p>	<p>Refuses to join special program for gifted students Denies talent Resists challenges Is defensive Has mood swings</p>
<p>Scale 3: Risk avoiding behavior</p>	<p>Resists challenges Non-risk taking Takes no risks Is independent (reverse)</p>
<p>Scale4: Social/emotional problems</p>	<p>Is defensive Does not participate in class Lacks social skills Isolates self Is dependent Is dishonest Has good self-control (reverse) Is disruptive Neglects him/her self</p>

## Appendix F: Versnellingswenselijkheidslijst (VWL)



# De VersnellingsWenselijkheidsLijst

Centrum voor BegaafdheidsOnderzoek  
Radboud Universiteit Nijmegen

Drs. Lianne Hoogeveen

Dr. Janet van Hell

Prof. Dr. Ludo Verhoeven

De VersnellingsWenselijkheidsLijst (VWL) is een uitgave van het Centrum voor Begaafdheidsonderzoek (CBO), augustus 2003. De lijst kan men ook downloaden vanaf de website van het CBO (kies publicaties).

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## Voorwoord

De VersnellingsWenselijkheidsLijst (VWL) is ontwikkeld om leerkrachten en andere betrokkenen te ondersteunen in de beslissing een leerling al dan niet vervroegd naar een volgende groep te laten gaan (halverwege het schooljaar) c.q. een groep te laten overslaan (aan het eind van het schooljaar). De lijst kan gebruikt worden vanaf groep 1 / 2. Hoewel het overslaan van een groep meestal in verband gebracht wordt met hoogbegaafde leerlingen, is (gediagnosticeerde) hoogbegaafdheid geen voorwaarde om voor een leerling de VWL in te vullen.

De lijst is samengesteld, in samenwerking met de Stichting Leerplanontwikkeling (SLO), na uitvoerig onderzoek van het Centrum voor Begaafdheidsonderzoek (CBO) van de Radboud Universiteit Nijmegen naar het functioneren van versnelde en niet versnelde hoog intelligente leerlingen en adolescenten. Ze is mede gebaseerd op de Iowa Acceleration Scale<sup>1</sup> en op het "Multi-dimensionale Model van Begaafdheid en Talent"<sup>2</sup>. Omdat dit de eerste uitgave is van deze lijst, wordt u vriendelijk verzocht een kopie van de ingevulde lijst, plus een ingevuld evaluatieformulier, naar het CBO te sturen, zodat deze gebruikt kan worden voor verder onderzoek op dit terrein. Alle toegezonden informatie wordt natuurlijk vertrouwelijk behandeld en anoniem verwerkt.

De eigenlijke vragenlijst wordt voorafgegaan door een inleiding, waarin achtergrond en doel van de VWL worden uiteengezet. Vervolgens wordt een handleiding gegeven voor het invullen van de VWL. Verder vindt u na de vragenlijst een overzicht van binnen- en buitenlands onderzoek met betrekking tot (hoog)begaafdheid en versnelling.

---

<sup>1</sup> Assouline, Colangelo, Lupkowski-Shoplik & Lipscomb (1998)

<sup>2</sup> Ziegler & Heller (2000).

## Inleiding

Het overslaan van een groep of het doorlopen van twee groepen in één schooljaar zijn vormen van versnelling die steeds frequenter worden toegepast in het Nederlands basisonderwijs. Te vaak echter is 'gebrek aan andere mogelijkheden' de voornaamste, en soms zelfs enige, reden om over te gaan tot een van deze maatregelen. Veel onderwijsgeevenden en ouders maken zich dan ook zorgen over het (uiteindelijke) effect van deze vormen van versnelling. Zij maken zich zorgen over de cognitieve ontwikkeling, maar veel meer nog over de sociaal-emotionele ontwikkeling van de versnelde leerling.

Onderwijsaanpassingen, zoals 'compacten en verrijken', samenwerkend leren of het versnellen binnen één vak, zijn voor veel (hoog)begaafde en/of zeer goed presterende leerlingen goede oplossingen. Behalve dat niet iedere basisschool deze aanpassingen kan bieden, zijn er echter ook kinderen waarbij een dergelijke maatregel onvoldoende is voor een optimale ontwikkeling. Deze leerlingen zijn er het meest bij gebaat om, naast de hierboven genoemde aanpassingen, óók te versnellen naar een volgende groep.

Omdat het hier gaat om een ingrijpende maatregel, is het van belang dat deze op gefundeerde wijze genomen wordt, niet in de laatste plaats om de zorg bij ouders en onderwijsgeevenden weg te nemen. Uit internationaal onderzoek is gebleken dat het versnellen naar een volgende groep een effectieve interventie kan zijn in het onderwijs aan (hoog)begaafde en/of zeer goed presterende leerlingen. Dat betekent nog niet dat deze interventie geschikt is voor *iedere* leerling met hoge intellectuele capaciteiten. De VernellingsWenselijkheidsLijst (VWL) is bedoeld om alle relevante factoren met betrekking tot een specifieke leerling mee te laten wegen in de uiteindelijke beslissing om al dan niet tot het versnellen naar een volgende groep over te gaan.

De VWL kan gebruikt worden als eerste instrument in de discussie over het eventueel versnellen naar een volgende groep. De handleiding bevat informatie over het invullen, scoren en interpreteren van het VWL formulier. De bedoeling is dat zowel de handleiding als het formulier gebruikt worden binnen een interdisciplinair team van onderwijsgeevenden en ouders, waarbij ook de leerling zelf betrokken kan worden.

Behalve data van gestandaardiseerde testen worden ervaringen en observaties van ouders en leerkrachten meegenomen, om een zo compleet mogelijk beeld te krijgen. De scores dienen als handvaten voor verdere discussie en planning.

Het voordeel van het gebruikmaken van de VWL is dat belangrijke factoren, die van invloed kunnen zijn op het functioneren van een leerling, niet over het hoofd

worden gezien. Ook wordt aangegeven hoe zwaar verschillende factoren zouden moeten wegen in de beslissing.

Als bijlage van de VWL vindt u een overzicht van de Nederlandse situatie met betrekking tot de begeleiding van (hoog)begaafde leerlingen in het basisonderwijs en een korte beschrijving van binnen- en buitenlands onderzoek met betrekking tot het versnellen van leerlingen.

### **Invullen en interpreteren van de VersnellingsWenselijkheidsLijst (VWL)**

Het is van belang dat één persoon (leerkracht of intern begeleider) verantwoordelijk is voor het invullen van de VWL, waarbij overleg met meerdere betrokkenen gewenst is. Geadviseerd wordt de Intern Begeleider, leerkrachten die de leerling kennen, ouders, en eventueel een extern hulpverlener bij dit overleg te betrekken.

Als er eerder (psychologisch of pedagogisch) onderzoek is gedaan bij de leerling, dan is het gewenst de gegevens van dit onderzoek bij het invullen erbij te houden. Indien deze niet tot ter beschikking staan, kunnen deze door de ouders worden opgevraagd bij de instantie waar de leerling is onderzocht.

Na het invullen van de VWL kan, door het optellen van omcirkelde waarden, worden gekomen tot een score. Hoe hoger deze score is, hoe meer deze leerling geschikt is om een groep over te slaan. Er is geen zogenaamde 'cut-off' score (waarboven wèl en waaronder níet tot het overslaan van een groep moet worden overgegaan). Behalve dat er op grond van de VWL score besloten wordt of de leerling al dan niet versneld wordt naar een volgende groep, moet gekeken worden welke andere vormen van onderwijsaanpassing naast of in plaats van de versnelling zullen worden toegepast. **Niet achter elk item staan waarden die omcirkeld moeten worden. Het gaat hierbij om items waarvan nog niet of niet voldoende duidelijk is of ze van invloed zijn op het welslagen van een versnelling, of in welke mate. Het betreft hier bijvoorbeeld vragen die te maken hebben met de persoonlijkheid of het sociaal functioneren van een leerling. Het is van belang deze items wel in te vullen, om een zo compleet mogelijk beeld te krijgen. Deze gegevens kunnen bovendien worden meegenomen in verder onderzoek.**



Hieronder zullen de verschillende items worden besproken.

**1. Algemene informatie**

Hier wordt gevraagd naar objectieve informatie over de leerling, het gezin en de school

**2. Capaciteiten en Vaardigheden**

A. *Prestaties en Vaardigheden op School*: Hier wordt informatie gevraagd over de schoolprestaties van de leerling en over speciale vaardigheden die tot nu toe zijn opgevallen.

B. *Schoolevaluaties*: Hier wordt gevraagd naar de resultaten van eerder afgenomen toetsen of vragenlijsten (geen intelligentietesten) zoals bijvoorbeeld Cito-toetsen en de Schoolvragenlijst.

C. *Professionele evaluaties*: Als een leerling eerder onderzocht of behandeld is door een psycholoog, pedagoog, psychiater, maatschappelijk werker, of ander professioneel deskundige, wordt gevraagd dit te vermelden met toevoeging van eventuele schriftelijke verslaglegging hiervan.

D. *Intelligentie*: Hier wordt gevraagd naar de resultaten van eventueel afgenomen intelligentietesten.

**3. Specifieke Factoren**

Hierbij wordt gevraagd naar specifieke factoren, zoals broers en zussen, medicijngebruik, groepskenmerken, het profiel van de leerling, die van invloed kunnen zijn op het functioneren van een leerling na het overslaan van een groep.

Bij de beslissing om een leerling al dan niet versneld naar een volgende groep te laten gaan speelt ook mee wat eventuele alternatieven zijn. Als die er niet zijn, zal eerder tot deze vorm van versnelling moeten worden overgegaan, omdat géén onderwijsaanpassing in veel gevallen schadelijker zal zijn dan een aanpassing die misschien niet optimaal is. Zijn er geschikte alternatieven, dan zal men bij een lagere score op de VWL eerder daarvoor kiezen. Overigens is versnellen alléén nooit voldoende als maatregel: ook na het overslaan van een groep zal aanpassing (in meer of mindere mate, afhankelijk van de leerling en de schoolse organisatie) van het lesprogramma noodzakelijk zijn.

**4. Attitude en ondersteuning**

Hier wordt gevraagd aan te geven in hoeverre direct betrokkenen staan tegenover de beslissing de leerling te laten versnellen. Als de leerling hier zelf negatief tegenover staat, betekent dit dat niet zonder meer tot versnellen kan worden overgegaan. Het is echter van belang de reden van de negatieve houding te achterhalen. Veel leerlingen die niet willen versnellen, willen dat niet uit angst voor het onbekende. Die angst kan verminderd worden door

met de leerling te bespreken waarom de versnelling wordt overwogen, en wat de voor- en nadelen kunnen zijn. Ook kennismaking met de eventueel ontvangende leerkracht kan een deel van de angst of onzekerheid wegnemen. Het is ook van belang dat de ouders een positieve houding hebben tegenover de versnelling. Is die niet aanwezig dan kan dat voortkomen uit een gebrek aan kennis en daardoor onterechte aannames (zoals: *versnelling leidt altijd tot sociaal emotionele problemen*). In dat geval kan het verschaffen van kennis op dit gebied de ouders van mening doen veranderen. Het is ook mogelijk dat de ouders gegronde redenen hebben om niet met een versnelling in te stemmen. Dit kan duidelijk worden in een gesprek met ouders en betrokkenen van de school. In dat geval wordt de versnelling dan ook afgeraden.

Het zal in grote mate van de leerkracht afhangen of de leerling na de versnelling goed zal functioneren. Het is dan ook van groot belang dat met name de ontvangende leerkracht positief staat tegenover de versnelling, en dat zij of hij daarin gesteund wordt door het schoolteam. Ook hier speelt kennis over (hoog)begaafdheid en versnelling een belangrijke rol. De bijlage “De begeleiding van (hoog)begaafde leerlingen in het basisonderwijs” kan zowel ouders als leerkrachten een duidelijker beeld geven van (hoog)begaafdheid en versnelling.

#### **5. Samenvatting en planning**

In dit deel staan, naast enkele leerlinggegevens, de scores van de afzonderlijke delen van de VWL. De beslissing(en) ten aanzien van het te volgen programma voor de leerling word(t)(en) duidelijk aangekruist en/of opgeschreven evenals de namen en functies van de personen die bij het programma betrokken worden. Er wordt aangegeven wanneer en op welke manier er geëvalueerd zal worden. Dit formulier wordt door alle betrokkenen ondertekend.

## VersnellingsWenselijkheidsLijst (VWL)

1. **Algemene informatie**

**A. Leerling informatie**

Naam leerling: \_\_\_\_\_

School: \_\_\_\_\_ Huidige Groep: \_\_\_\_\_

Voorgestelde groep: \_\_\_\_\_

	Jaar	Maand	Dag
Datum van invullen	_____	_____	_____
Geboortedatum leerling	_____	_____	_____
Leeftijd leerling	_____	_____	_____

**B. Gezinsinformatie**

Naam vader:

Naam moeder:

Gezinsinformatie:  leerling woont bij beide ouders  
 leerling woont bij moeder (wel/geen contact met vader)  
 leerling woont bij vader (wel/geen contact met moeder)  
 er is sprake van co-ouderschap

Broers/zussen:		Leeftijd	School	Groep
1.	_____ m/v	_____	_____	_____
2.	_____ m/v	_____	_____	_____
3.	_____ m/v	_____	_____	_____
4.	_____ m/v	_____	_____	_____

### C. Schoolinformatie

Betrokkenen bij de beslissing tot eventueel versnellen<sup>1</sup> (namen invullen):

O Directeur: \_\_\_\_\_ 1

O Ouder/verzorger: \_\_\_\_\_ 1

O Huidige leerkracht: \_\_\_\_\_ 1

O Ontvangende leerkracht: \_\_\_\_\_ 1

O Andere betrokkene(n): \_\_\_\_\_ 1

Dit formulier is ingevuld door \_\_\_\_\_

(functie \_\_\_\_\_)

---

<sup>1</sup>Aankruisen wat van toepassing is, meerdere antwoorden mogelijk

Het initiatief voor een eventuele versnelling is genomen door (maar één antwoord aankruisen!):

- O de leerling zelf 1
- O de ouders 1
- O school (naam: \_\_\_\_\_, functie: \_\_\_\_\_) 2
- O anders, nl. \_\_\_\_\_ 1

Score deel 1:

(min:2 - max: 7)

2. **Capaciteiten en Vaardigheden****A. Prestaties en Vaardigheden op School***Prestaties, vergeleken met groepsgenoten<sup>1</sup>:*

	boven gemiddeld	gemiddeld	onder gemiddeld
Lezen	2	1	0
Taal	2	1	0
Rekenen	2	1	0
Wereld-oriëntatie	2	1	0

*Vaardigheden, in vergelijking met groepsgenoten<sup>1</sup>:*

	boven gemiddeld	gemiddeld	onder gemiddeld
Creatieve vakken	2	1	0
Sport	2	1	0
Leiderschap	2	1	0

Toelichting:

Score item 2A:  (0-14)<sup>1</sup> Omcirkel het getal dat van toepassing is

## B. Schoolevaluaties

### Vragenlijsten

Geef hieronder aan welke vragenlijst(en) en/of toets(en) bij de leerling zijn afgenomen tot nu toe, en in welke groep dat is gebeurd (eventuele verslagen toevoegen):

**O SchoolVragenLijst, in groep \_\_\_\_\_**

LG: ....., CK: ....., HA: .....,RL:..... SA: ....., PS: ....., ZP : ....., UV : ....., SV : ....., SW : ...<sup>1</sup>

**O Andere vragenlijst of toets, nl: \_\_\_\_\_ in groep \_\_\_\_\_**

### Cito-toetsen<sup>2</sup>

<i>toets</i>	<i>score</i>	<i>toets</i>	<i>score</i>	<i>toets</i>	<i>score</i>
Ordenen		Leesttechniek & tempo		SVS Werkwoorden	
Ruimte en Tijd		Lezen met Begrip-SBR		Taalschaal	
Taal voor Kleuters		Lezen met Begrip-SVR		Woordenschattoets	
toets Tweektaligheid		Toetsen Begrijpend Lezen		Leeswoordenschat	
Begrippentoets		Luisteren		Rekenen-Wiskunde	
DMT		SVS Niet-Werkwoorden		Wereldoriëntatie	
Entreetoets					

<sup>1</sup> LG = leertaakgerichtheid, CK = concentratie in de klas, HA = huiswerkattitude, RL = relatie met de leerkracht, SA= sociaal aanvaard worden, PS: plezier op school, ZP= zelfvertrouwen bij proefwerken, UV= uitdrukkingsvaardigheden, SV= sociale vaardigheden , SW = sociale wenselijkheid

<sup>2</sup> Sommige toetsen worden op meerdere momenten afgenomen. De bedoeling is de score van de *laatst afgenomen* cito-toets te vermelden, mits deze op het geïndiceerde moment is afgenomen. Als er is doorgetoetst (bijvoorbeeld een toets van midden groep 3 is afgenomen in groep 2) dan wordt deze score niet meegenomen in de berekening (een eventuele B-score zou dan namelijk geen goede indicatie zijn voor de vaardigheden van deze leerling).

**Score:** *aantal A's x 12 / aantal afgenomen toetsen* = \_\_\_\_\_

(bijvoorbeeld: 4 keer een A en 2 keer een B:  $4 \times 12 = 48 / 6(\text{aantal toetsen}) = 8$ )

Score item 2B:  (0-12)

**C. Professionele evaluaties**

Is de leerling onderzocht door een psycholoog / pedagoog?	Nee	6
	Ja	

Wanneer vond het onderzoek plaats? \_\_\_\_\_

Wat was de reden van onderzoek? \_\_\_\_\_

Een groep overslaan werd	Aangeraden	12
	Afgeraden	
	Geen uitspraak over gedaan	6

Score item 2C:  (0-12)



**D. Intelligentie**

Op een individuele intelligentie test (naam van de test: \_\_\_\_\_) afgenomen in de afgelopen drie jaar, behaalde de leerling de volgende (totaal) IQ scores<sup>1</sup> (a.u.b. omcirkelen):

er is geen IQ test afgenomen	8
gemiddeld (85 - 114)	0
boven gemiddeld (115-129)	4
hoog (130-144)	8
zeer hoog (145+)	12

Was er een significant verschil tussen het verbale en performale IQ?<sup>2</sup>

Nee

Ja: VIQ = \_\_\_\_\_ is hoger dan PIQ = \_\_\_\_\_

Ja: PIQ = \_\_\_\_\_ is hoger dan VIQ = \_\_\_\_\_

Score item 2D:  (0-12)

---

<sup>1</sup> IQ- scores kunnen door de ouders worden opgevraagd bij het instituut waar de leerling onderzocht is.

<sup>2</sup> Als er een significant verschil is wordt dit in de verslaglegging van de testafname vermeld.

*Capaciteiten en Vaardigheden*

Tel de itemscores 2A t/m 2D bij elkaar op, om te komen tot de capaciteiten en vaardigheidsscore.

*Score deel 2 (2A t/m 2D) :* \_\_\_\_\_

Een subtotaal lager dan 27 (max. = 50) indiceert te weinig capaciteiten en/of vaardigheden om een versnelling te doen slagen. Er kan echter sprake zijn van onderpresteren. Om daar meer duidelijkheid over te krijgen is verder (psychologisch) onderzoek gewenst. Als dat al heeft plaatsgevonden en er geen versnelling is aangeraden, dan wordt geadviseerd niet te versnellen.

Bij een score van 27 of hoger, kan overgegaan worden tot het invullen van de rest van het formulier.

3. **Specifieke factoren**

De leerling heeft een broer en/of zus, en komt na een eventuele versnelling in dezelfde groep als broer en/of zus.	0
De leerling heeft broer(s) en/of zus(sen), maar komt na een eventuele versnelling <i>niet</i> in dezelfde groep	1
De leerling is enig kind	1
Groep waarnaar eventueel versneld wordt is een gecombineerde groep	1
is geen gecombineerde groep	0
Na de eventuele versnelling gaat de leerlingen naar	
groep 2 of 3	2
groep 4, 5 of 6	1
groep 7 of 8	0

Leerling past het best in het volgende profiel (zie bijlage):

succesvolle leerling

uitdagende leerling

onderduikende leerling

drop-out

leerling met leer- en/of gedragsproblemen

zelfstandige leerling

Heeft de leerling een gediagnosticeerd leerprobleem (bijv. dyslexie, dyscalculie)?

Nee 2

Ja, namelijk ..... 0

De leerling ....

.... gebruikt medicatie, die *gericht* is op het verbeteren van gedrag of

Appendices

- sociaal-emotioneel functioneren, namelijk \_\_\_\_\_
- O .... gebruikt medicatie, die als *bijwerking* van invloed kan zijn op het functioneren, namelijk \_\_\_\_\_
- O .... heeft een gediagnosticeerd lichamelijk probleem dat zijn of haar functioneren op school kan beïnvloeden, namelijk \_\_\_\_\_
- O ....heeft speciale onderwijskundige begeleiding (gehad), namelijk \_\_\_\_
- O .... neemt deel aan aangepast programma voor (hoog)begaafde leerlingen
- O .... is reeds versneld in een of meerdere vakken, namelijk \_\_\_\_\_
- O ....is vervroegd naar groep 3 gegaan
- O .... heeft reeds een groep overgeslagen, nl. groep \_\_\_\_
- O .... is nooit versneld/gedoubleerd en is jarig tussen 1 okt. en 1 jan. 2
- O .... is nooit versneld/gedoubleerd en is jarig tussen 1 jan. en 1 juli 1
- O .... is nooit versneld / gedoubleerd en is jarig tussen 1 juli en 1 okt.
- O .... heeft een jaar extra gekleuterd
- O .... is een keer blijven zitten, nl. in groep \_\_\_\_
- O .... is groot voor zijn/haar leeftijd 1
- Alternatieven voor versnelling die op school mogelijk zijn:
- O versnelling binnen één of enkele vakken
- O compacting en verrijking, nl. ....
- O verrijking (extra stof zonder compacting van de reguliere stof), nl. .... 1
- O anders, nl. ....
- O geen van bovenstaande alternatieven zijn mogelijk 2

Score deel 3:  (0-11)

4. **Attitude en ondersteuning**

Hoe staan de onderstaande personen tegenover een eventuele versnelling? (omcirkel het getal dat van toepassing is). Als de houding onbekend is, wordt "1"(neutraal) gescoord.

	positief	neutraal	negatief
leerling zelf	2	1	0
ouder(s)	2	1	0
school algemeen	2	1	0
leerkracht groep van waaruit versneld werd	2	1	0
ontvangende leerkracht	2	1	0
ander(en), namelijk <sup>1</sup> :	2	1	0

Score deel 4:  (0-12)

## 5.

<sup>1</sup> Indien geen anderen bij het proces zijn betrokken, scoor 1

## **Samenvatting en Planning**

### **Leerling informatie**

Naam leerling: \_\_\_\_\_

School: \_\_\_\_\_

Huidige Groep: \_\_\_\_\_

Voorgestelde groep: \_\_\_\_\_

	Jaar	Maand	Dag
Datum van invullen	_____	_____	_____
Geboortedatum leerling	_____	_____	_____
Leeftijd leerling	_____	_____	_____

### **Scores VWL**

1. Algemene informatie:	_____ (2 – 7)
2A. Prestaties en Vaardigheden op school:	_____ (0 - 14)
2B. Testresultaten:	_____ (0 – 12)
2C. Professionele evaluaties:	_____ (0 – 12)
2D. Intelligentie:	_____ (0 – 12)
3. Specifieke factoren:	_____ (0 – 11)
4. Attitude en Ondersteuning:	_____ (0 – 12)
Totaalscores:	_____ (29 – 80)

**Interpretatie van de totaalscore:**

- |         |  |
|---------|--|
| > 67    | Versnelling in de vorm van het overslaan van een groep wordt sterk aangeraden  |
| 54 - 67 | Het overslaan van een groep wordt aangeraden   |
| 41 - 54 | Het overslaan van een groep kan worden overwogen, maar er wordt aangeraden eventuele alternatieven goed te bestuderen. |
| < 41    | Het overslaan van een groep wordt afgeraden  |

**Beslissing m.b.t.** \_\_\_\_\_ (naam leerling)

- versnelling naar groep \_\_\_\_\_<sup>1</sup>
- leerling blijft in huidige groep

Overige onderwijsaanpassing(en) naast of in plaats van de versnelling:

- versnelling in een of meerdere vakken, namelijk \_\_\_\_\_
- compacten en verrijken<sup>2</sup> \_\_\_\_\_
- andere aanpassing van het schoolprogramma, namelijk \_\_\_\_\_

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<sup>1</sup> Een versnelling zal altijd in combinatie ‘compacting en verrijking’ moeten plaatsvinden. Deze combinatie van maatregelen kan in het handelingsplan worden uitgewerkt.

<sup>2</sup> Bijvoorbeeld m.b.v. “Anders kijken naar je methode. Compacting van taal-/leesonderwijs” van Bronkhorst en Drent (zie referentielijst)

## Appendices

Het handelingsplan n.a.v. bovengenoemde beslissing zal worden samengesteld door: \_\_\_\_\_

Betrokkenen bij de uitvoer van genoemd handelingsplan zijn

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Moment van versnelling / start aangepast schoolprogramma:

\_\_\_\_\_

### **Evaluatiemomenten:**

De inhoud en de frequentie van evaluatiemomenten zullen afhangen van de leerling en de situatie: als een van de partijen (leerling, leerkracht, ouders) aanwijzingen ziet voor mogelijke problemen, dan is het wenselijk zeer regelmatig bij elkaar te komen (bijvoorbeeld eens of eventueel zelfs twee keer per maand). Als iedereen het idee heeft dat het goed gaat met de leerling is een evaluatie eens per drie maanden voldoende. Ook de inhoud van de bijeenkomst zal afhangen van de situatie: het is van belang zowel de leerprestaties als het sociaal emotioneel functioneren van de leerling aan bod te laten komen. Aanwezigheid van ouder(s) en leerkracht is bij iedere bijeenkomst gewenst. Bovenbouw-leerlingen kunnen zelf ook bij de evaluatie aanwezig zijn, mits er geen sprake is van zware problemen: dan kan de aanwezigheid voor de leerling te belastend zijn. Als er geen problemen zijn is de aanwezigheid van anderen (zoals de remedial teacher, intern begeleider of extern deskundige) maar af en toe nodig.

Datum	Aanwezigheid gewenst van:	Verslaglegging door:	Verslag naar:



**Betrokkenen bij de genomen beslissing (namen invullen):**

*Huidige leerkracht(en):* \_\_\_\_\_

Extra aandacht voor<sup>1</sup>: \_\_\_\_\_

(Eventueel) *ontvangende leerkracht(en):*

\_\_\_\_\_

Extra aandacht voor: \_\_\_\_\_

*Andere betrokkene* (bijv. RT, IB): \_\_\_\_\_

Extra aandacht voor: \_\_\_\_\_

*Ouder(s):* \_\_\_\_\_

Extra aandacht voor: \_\_\_\_\_

*Schooldirectie:* \_\_\_\_\_

Extra aandacht voor: \_\_\_\_\_

\_\_\_\_\_  
<sup>1</sup>Hier kan de betreffende betrokkene uiting geven aan eventuele twijfels bij de genomen beslissing

Appendices

*Leerling:* \_\_\_\_\_

Extra aandacht voor: \_\_\_\_\_

\_\_\_\_\_  
*Plaats en Datum*  
*eindverantwoordelijk*

\_\_\_\_\_  
*Handtekening*

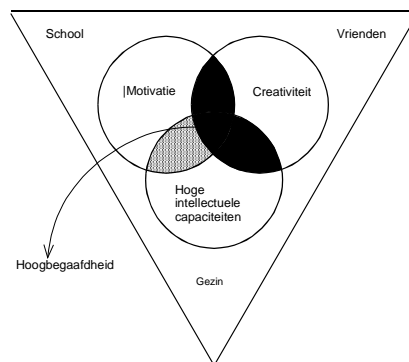
\_\_\_\_\_  
*Functie*

# De Begeleiding van (hoog)begaafde Leerlingen in het Basisonderwijs

Op scholen wordt steeds gezocht naar mogelijkheden om ook de leerlingen, die op een of andere manier afwijken van de gemiddelde leerling, passend onderwijs te bieden. Leerlingen, die (zeer) intelligent zijn, maken deel uit van deze groep. Dat er iets gedaan moet worden met betrekking tot (hoog)begaafde leerlingen, staat voor veel mensen vast. Om welke kinderen het nu precies gaat, is echter vaak minder duidelijk.

## 1. De (hoog)begaafde leerling

Het meest gangbare model van (hoog)begaafdheid in Nederland is het prestatie-gerichte Meer Factoren Model van Hoogbegaafdheid<sup>1</sup> (zie figuur 1).



*Figuur 1: Meer-factoren-model van hoogbegaafdheid (Mönks, 1995)*

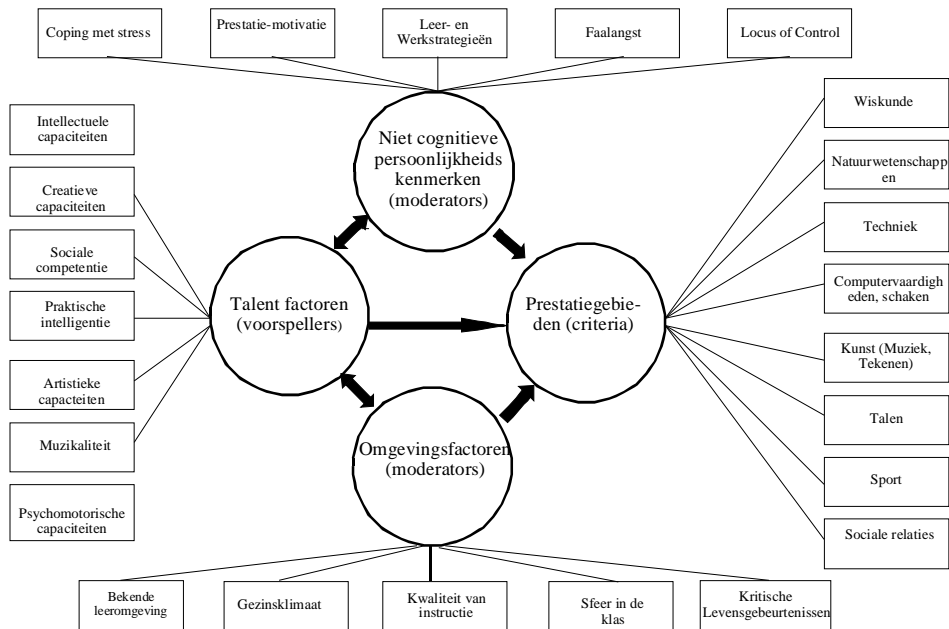
Een ander prestatiegericht model, het “Multidimensionale Model van Begaafdheid en Talent” van Heller<sup>2</sup> (zie figuur 2), krijgt ook steeds meer bekendheid. (In de

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<sup>1</sup> Mönks (1992)

<sup>2</sup> Ziegler & Heller (2000)

informatiebrochure “(Hoog)begaafde leerlingen in het basisonderwijs”<sup>3</sup>, verkrijgbaar via de Stichting Leerplanontwikkeling (SLO), worden deze twee modellen beschreven<sup>4</sup>.



*Figuur 2: Multi-dimensionaal model van begaafdheid en talent*

<sup>3</sup> Hulsbeek, Steenbergen-Penterman, & Bronkhorst (2002)

<sup>4</sup>Voor een meer uitgebreide omschrijving van deze verschillende definities van hoogbegaafdheid wordt verwezen naar het artikel van Mönks & Mason (2000).

Terwijl het “Meer Factoren Model van Hoogbegaafdheid” overzichtelijk is en beknopt aangeeft wat belangrijke factoren zijn die hoogbegaafdheid bepalen (namelijk *hoge intellectuele capaciteiten, motivatie en creativiteit*) en beïnvloeden (*school, thuis en vrienden*), geeft het “Multidimensionale Model van Begaafdheid en Talent” van Heller duidelijker het verschil aan tussen *capaciteiten* en *prestaties*. Naast *cognitieve capaciteiten* worden ook andere capaciteiten genoemd, zoals *sociale competentie, praktische intelligentie* en *muzikaliteit*. *Creativiteit* is zowel bij Mönks als bij Heller een voorwaarde voor hoogbegaafdheid, terwijl Heller aangeeft dat *Motivatie* van invloed is op het presteren, net als ‘*omgaan met stress*’, ‘*leer- en werkstrategieën*’ en ‘*faalangst*’. Het voordeel van het model van Heller is dat duidelijk wordt dat het gedrag dat wordt waargenomen geen weerslag is van de capaciteiten alléén, maar een gevolg van de combinatie van Talent, Persoonlijkheid en Omgeving. Zo kan verklaard worden dat een leerling met hoge intellectuele capaciteiten soms laag presteert op school, omdat zij of hij bijvoorbeeld te weinig gemotiveerd is of omdat hij of zij faalangstig is, maar het verklaart ook dat een sociaal competente leerling soms problemen ondervindt in sociale relaties.

In groep 2 wordt Sinterklaas gevierd. Er ligt een stapel met cadeautjes, met op ieder cadeautje een naam. De kleuters, waarvan de meeste hun eigen naam kunnen herkennen, mogen om de beurt hun cadeautje pakken. Esther, die al goed kan lezen, besluit het cadeautje van haar vriendinnetje te pakken, om het haar te geven. Is Esther sociaal competent? De leerkracht denkt van niet: voordat Esther haar plan kan uitvoeren, neemt de juf haar cadeautje af, geeft haar haar eigen cadeautje, en zegt later tegen Esthers moeder dat haar dochter als een van de weinigen haar eigen naam nog niet kan herkennen.

Het is niet eenvoudig de sociale competentie van een kind te beoordelen. Want wat is nu precies sociale competentie? Sommigen noemen gedrag sociaal competent als een kind op dezelfde manier reageert als zijn of haar leeftijdgenoten<sup>5</sup>. De meeste mensen zijn het er over eens dat de omgeving van invloed is: het is mogelijk dat een bepaalde omgeving stimulerend is voor de sociale ontwikkeling van bepaalde kinderen, terwijl andere kinderen door dezelfde omgeving sociaal geremd worden.

De omgeving heeft invloed op het sociaal emotioneel functioneren, maar interpreteert ook dit functioneren. (Hoog)begaafde leerlingen kunnen, afhankelijk van leerling en leerkracht, heel verschillend ervaren worden. In het model van Heller spelen persoonlijkheid en omgeving hierbij een rol.

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<sup>5</sup> Jackson (1994)

### Profielen van (hoog)begaafde leerlingen

Gebaseerd op jarenlange praktijkervaring in de begeleiding van (hoog)begaafde leerlingen in het onderwijs maakten Betts & Neihart (1988) een indeling van profielen van (hoog)begaafde leerlingen. In hun omschrijving geven zij niet alleen aan

welk gedrag kenmerkend is voor elk profiel, maar ook welke begeleiding van school uit gegeven zou moeten worden. Zij komen tot zes profielen (zie ook bijlage A): *De succesvolle leerling* werkt hard en levert goede prestaties, maar zoekt ook bevestiging van de leerkracht en is

Rik van 9 is een typische uitdagende leerling. Hij roept regelmatig het (goede) antwoord door de klas, ook nadat hij daar al verschillende keren op is aangesproken. De leerkracht heeft nu besloten hem te negeren, in de hoop dat op die manier zijn gedrag verandert. Helaas, in plaats van dat het gedrag minder wordt, wordt Rik steeds drukker en is hij erg storend voor zijn medeleerlingen. Als de leerkracht in een gesprek met Rik duidelijk maakt dat ze weet dat Rik veel kennis heeft, lijkt dit een opluchting voor hem te zijn. Hij heeft minder de behoefte om zijn kennis voortdurend te etaleren en is bereid samen met de leerkracht te zoeken naar andere manieren om te laten weten wat hij allemaal al weet en kan, zonder dat hij daarbij storend is voor andere leerlingen.

afhankelijk. *De uitdager* vertoont irritant gedrag en kan in de groep behoorlijk lastig zijn. *De onderduiker* probeert niet als (hoog)begaafd te worden herkend. Deze leerling zoekt het sociale verkeer als een vluchtweg. Bij de groep horen is een belangrijke doelstelling. *De drop-out* is behoorlijk ver van het goede spoor geraakt; zij of hij isoleert zichzelf en bekritiseert zowel zichzelf als anderen. *De leerling met leer- en/of gedrags-problemen* valt op door inconsistenties. Hij of zij is storend en kan zich afreageren op anderen. *De zelfstandige leerling* tenslotte, is het meest evenwichtig van allemaal; zij of hij heeft goede sociale vaardigheden, doet mee, maar komt ook op voor eigen opvattingen.

Belangrijk is te weten dat een leerling niet een profiel 'voor het leven' heeft. Door verschillende oorzaken kan hij of zij van het ene type in het andere veranderen. Dat kan zowel in positieve als in negatieve richting. Ook hier zal de omgeving een grote rol spelen.

In hoeverre het profiel van een leerling het welslagen van een versnelling voorspelt is nog niet duidelijk en zal nader onderzocht worden.

## 2. Onderwijs aan (hoog)begaafde leerlingen

Ruim vijftien jaar geleden gaven de meeste leerkrachten aan wel eens te maken te hebben met hoogbegaafde leerlingen<sup>6</sup>. Een meerderheid vond dat speciale maatregelen en voorzieningen voor begaafde leerlingen noodzakelijk waren. Er waren weinig voorstanders voor groepen overslaan, verbreding of een groter vakkenaanbod. Onderzoekers constateerden dat “begaafde leerlingen, meer dan strikt noodzakelijk voor hen is, te maken krijgen met extra leer- en oefenstof en verdieping” (p. 209).

In een meer recente publicatie “Een slimme aanpak voor slimme leerlingen”<sup>7</sup> worden een aantal scholen van nu beschreven, die in staat zijn gebleken hun curriculum zo in te richten dat ook (hoog)begaafde leerlingen meer op hun eigen niveau worden aangesproken. Er lijken echter nog steeds maar weinig basisscholen te zijn met duidelijke maatregelen ten aanzien van (hoog)begaafde leerlingen.

Als er gesproken wordt over onderwijsaanpassing voor (hoog)begaafde leerlingen gaat het meestal over verrijking versus versnelling<sup>8</sup>. Vaak worden deze twee onderwijsmaatregelen als tegengesteld gezien, terwijl je zou moeten zoeken naar een combinatie van beide. Je zou zelfs kunnen stellen dat het geen verschillende maatregelen zijn. Zo vindt Keating<sup>9</sup> dat versnelling altijd verrijkend is en dat verrijkingsprogramma’s kinderen sneller laat leren. Mönks, Heller en Passow (2000) stellen voor om in plaats van ons af te vragen of verrijken of versnellen het meest wenselijk is, ons de vraag te stellen: Op welk moment is het meer zinvol om het tempo aan te passen, op welk moment is het meer zinvol de diepte of de breedte in te gaan, en hoe kan dit worden gerealiseerd?

### 2.1. Versnelling

Vaak wordt “versnelling” geassocieerd met ‘een groep overslaan’. Er zijn echter andere vormen van versnelling mogelijk<sup>10</sup>, waarvan er hieronder een aantal worden genoemd.

*Early entrance* (het vroeger naar school of naar groep 3 gaan)

In Nederland is het in principe niet mogelijk om een kind vóór het vierde jaar naar school te laten gaan. Versnelling naar groep 3 is wèl mogelijk. Onderzoek in de Verenigde Staten en Australië laat zien dat het vroeger naar groep 1 of 3 gaan zeker positief kan zijn voor kinderen, zowel wat betreft schoolse vaardigheden als op

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<sup>6</sup> Van Boxtel, Broekman en Roelofs (1987)

<sup>7</sup> Doornekamp, Drent, & Bronkhorst (1999)

<sup>8</sup> bijvoorbeeld in Doornekamp et al. (1999); van Gerven (2001); Drent (1998)

<sup>9</sup> geciteerd door Feldhusen (1983)

<sup>10</sup> Rogers & Kimpston (1992)

sociaal emotioneel gebied, mits een zorgvuldige afweging heeft plaatsgevonden<sup>11</sup>. Overigens wijst Gross (1992) erop dat vooral voor de zeer begaafde leerlingen een 'early entrance' zeker niet voldoende is, en dat een aangepast programma noodzakelijk blijft.

#### *Nongraded classroom*

Binnen een 'nongraded classroom' zitten leerlingen van verschillende niveaus bij elkaar in een lokaal en kan iedereen het curriculum doorlopen op een tempo dat past bij zijn of haar motivatie en capaciteiten. Aina (2001) noemt als een van de voordelen van een 'nongraded', of 'multiage classroom', dat de prestatieverwachtingen individueel zijn en dat er daardoor minder sprake is van competitie. Een combinatie-klas, zoals bijvoorbeeld binnen het Montessori-onderwijs, kan functioneren als een 'nongraded class-room'.

Anton zit op een Montessorischool. Vanaf groep 3 werkt hij, net als de andere leerlingen, op eigen tempo. In groep 6, zo rond de kerst, blijkt hij op het niveau te werken van de meeste zevende groepers. Als blijkt dat ook zijn meeste vriendjes zevende groepers zijn, besluit de leerkracht, na overleg met de ouders, Anton vanaf januari ook te beschouwen als zevende groeper. Hij doet mee met de entree toets en met het verkeersexamen. Als hij anderhalf jaar later de school verlaat is bijna iedereen vergeten dat Anton een versnelde leerling is.

#### *Grade telescoping*

De leerling doorloopt meerdere leerjaren in een kortere periode, bijvoorbeeld drie leerjaren in twee jaar tijd. Er wordt dus geen groep overgeslagen, maar de leerstof wordt, gecompriemd, in kortere tijd wordt aangeboden.

#### *Versnelling van een bepaald vak*

Bij deze vorm van versnelling blijft een leerling in zijn eigen (leeftijds)groep, maar doorloopt een bepaald vak, bijvoorbeeld rekenen, in een versneld tempo.

In de Verenigde Staten bestaan minstens 17 vormen van versnelling binnen het onderwijs<sup>12</sup> In Nederland wordt ook op meerdere manieren versneld. Systematisch bepaalde versnellingsprogramma's zijn echter nog niet opgezet<sup>13</sup>.

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<sup>11</sup> McCluskey, Marsey & Baker (1997); Rogers & Kimpston (1992); Gross (1999)

<sup>12</sup> Southern, Jones & Stanley (1993)

<sup>13</sup> Mönks (1995)



## De effecten van versnelling

Zolang leerlingen op school versneld worden, is er discussie over de mogelijke verdiensten en gevaren van het versnellen. Veel mensen maken zich zorgen over de negatieve consequenties.

In verschillende landen maken onderwijsgeevenden zich zorgen over mogelijke sociale problemen, te veel stress en het verlies van belangrijke ervaringen uit de kindertijd. Ook in Nederland klinken geluiden van bezorgdheid, bij onderwijsgeevenden, maar ook bij ouders<sup>14</sup>. In tegenstelling tot deze bezorgdheid, rapporteert de

"Anderen meenden dat het heel slecht voor Nanette was om als vijfjarige naar groep drie te gaan. Hoe konden wij als ouders zo'n beslissing nemen voor ons kind? We deden ons kind toch te kort ... Sociaal-emotioneel zou ons kind schade oplopen ...." (fragment uit "Help, mijn dochter is hoogbegaafd" (Boulanger, Peters & Hoogeveen, 2000))

literatuur sterke positieve gevolgen van versnelling<sup>15</sup> en blijken de geuite zorgen niet gebaseerd te zijn op de realiteit. Uit vele onderzoeken is gebleken dat leerlingen na een versnelling beter functioneren op cognitief gebied en zeker niet minder, volgens sommige onderzoeken zelfs beter, op sociaal emotioneel gebied<sup>16</sup>. Bij onderzoek naar Nederlandse hoogintelligente versnelde en niet versnelde leerlingen blijken er nauwelijks verschillen in zelfconcept te bestaan<sup>17</sup>. Versnelde leerlingen, jonger dan 10 jaar oud, blijken alleen wat betreft rekenen een positiever zelfconcept te hebben dan hun niet versnelde, hoogintelligente leeftijdgenootjes. Versnelde hoogintelligente leerlingen van primair en secundair onderwijs in Nederland blijken ook niet meer of minder contacten te hebben of andere activiteiten te hebben dan niet versnelde hoog intelligente leerlingen<sup>17</sup>. Tenslotte worden versnelde hoogintelligente leerlingen door hun ouders en leerkrachten wat betreft de meeste gedragskenmerken hetzelfde (of positiever) beoordeeld als niet versnelde hoogintelligente leerlingen<sup>18</sup>.

Toch blijken nog veel mensen, ook onderwijsgeevenden die ervaring hebben met (hoog)begaafde leerlingen, sterke bezwaren te hebben tegen versnelling, omdat ze één of meerdere van de hierboven genoemde problemen verwachten.

Het is dan ook niet voor iedere hoogintelligente leerling op ieder willekeurig moment per definitie goed om te versnellen naar een volgende groep. Verschillende factoren spelen een rol bij het al dan niet welslagen van een versnelling. Wat in ieder geval van belang is dat, als de beslissing tot het overslaan

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<sup>14</sup> Hoogeveen (2000)

<sup>15</sup> Gallager, 1991)

<sup>16</sup> Gross (1992); Silverman (1989); Heinbokel (1997)

<sup>17</sup> Hoogeveen, van Hell & Verhoeven (aangeboden)

<sup>18</sup> Van Poppel (2002)

van een groep genomen wordt, alle betrokkenen hier achter staan. Uit onderzoek<sup>19</sup> is gebleken dat leerkrachtverwachtingen van grote invloed kunnen zijn op het functioneren van een leerling en dat gedrag, dat verwacht wordt dat zal optreden, juist dóór die verwachting ook daadwerkelijk optreedt (“self-fulfilling prophecy”).

Hoewel uit internationaal onderzoek blijkt dat (hoog)begaafde kinderen over het algemeen ook in sociaal emotioneel opzicht op hun leeftijdgenoten vooruit zijn, signaleren leerkrachten toch sociaal-emotionele problemen bij versnelde leerlingen. Ook uit onderzoek bij Nederlandse versnelde leerlingen in de eerste twee klassen van het voortgezet onderwijs blijkt dat het niet altijd even goed gaat met deze kinderen. Een verklaring is te vinden juist in het feit dat ze vaak hun leeftijdgenoten (ook op dit gebied) vooruit zijn. Daar heb je niet zo veel aan als er toch van je verwacht wordt te functioneren op het niveau van je groepsgenoten.

Belangrijk is dat leerkrachten sociaal-emotionele problemen op de juiste wijze weten te interpreteren, wat in de praktijk vooral neerkomt op het niet te snel denken dat een kind sociaal-emotioneel zwak is of achter loopt, omdat hij of zij jonger is dan de andere kinderen in de groep of klas. Op het moment dat er begrip is voor het probleem, kan er ook beter op worden ingespeeld. Een manier om een hoogbegaafde leerling te ondersteunen is voor deze leerling binnen de groep een “maatje” te zoeken”, een kind dat sociaal sterk is en daar wel mee uit de voeten kan. Door de leerling hiermee te laten werken, zal hij of zij zich in de eerste plaats veiliger voelen en ook van de ander kunnen leren.

Een regelmatig terugkerend gesprekje met de leerkracht blijkt eveneens een positief effect te hebben. In veel gevallen zal de versnelde leerling namelijk zelf óók denken dat hij of zij een sociaal probleem heeft, wat de situatie alleen maar verergert. In regelmatig terugkerende gesprekjes kan de leerkracht duidelijk maken het anders te zien, zodat ook de leerling zijn/haar eigen gedrag leert kennen en leert met zijn of haar hoge intelligentie om te gaan.

Zoals al eerder gesteld werd: alléén maar versnellen is geen voldoende aanpassing

Nina (4) is een vrolijke, enthousiaste en verbaal zeer vaardige kleuter. Ze kan bijna niet wachten tot ze naar school mag. Als het dan zo ver is komt ze stralend de klas in. Ze babbelt met iedereen en heeft allerlei plannen en ideeën om met haar nieuwe vriendjes en vriendinnetjes te gaan spelen. Al gauw verdwijnt de vrolijkheid echter. Andere kleuters vinden Nina maar “stom” en steeds vaker loopt ze alleen op het schoolplein. Soms vraagt ze de juf of ze de pauze niet binnen mag blijven, maar dat vindt juf niet goed. Aan de ouders vertelt juf dat Nina nog wel een heel jong kleutertje is, wiens sociale vaardigheden achter lopen op de rest van de groep. Op haar schaakclubje, waar haar ouders haar na lang zeuren naar toe laten gaan, heeft Nina echter heel veel vriendinnetjes, maar die zijn wel veel ouder dan zij ....

van het onderwijs voor (hoog)begaafde leerlingen. Daarnaast zal de leerstof moeten worden aangepast. Uit een inventarisatie van hoe scholen met hoogbegaafde leerlingen omgaan<sup>20</sup> bleek dat, naast versnelling, het aanbieden van extra leerstof het meest werd toegepast. Het aanbieden van extra stof, zonder aanpassing van de reguliere leerstof, komt echter te weinig tegemoet aan de leerbehoeften van (hoog)begaafde leerlingen<sup>21</sup>

## 2.2. Compacting en Verrijking

Met compacting en verrijking wordt bedoeld dat het reguliere curriculum van een of enkele vakken wordt aangepast aan de sterke en eventueel zwakkere punten of specifieke hiaten van de individuele leerling. Dit wil zeggen dat een leerling bepaalde stof kan overslaan omdat die al beheerst wordt. In de tijd die gewonnen wordt met het overslaan van bepaalde onderdelen van de stof, richt hij of zij zich op nieuwe leerstof. Hij of zij kan daardoor sneller door het curriculum gaan<sup>22</sup> of er kan een verrijkt programma worden aangeboden, zonder versnelling naar een volgende groep.

Verrijken kan op verschillende manieren. Drie vormen van verrijking zijn; ‘verdieping’ (de reguliere stof wordt met opdrachten uitgebreid), ‘verhoging’ (kennis en vaardigheden worden op een hoger abstractieniveau aangeboden) ‘en verbreding’ (presentatie van vakken die niet direct behoren tot het onderwijsaanbod)<sup>23</sup>.

Praktische richtlijnen voor ‘compacting en verrijking’ in het Nederlands basisonderwijs worden onder andere gegeven in publicaties van Drent (1998), Bronkhorst en Drent (2001) en van Gerven (2001). Het tijdschrift Vooruit<sup>24</sup> biedt lessen die als verrijking kunnen worden gebruikt.

## 2.3 Versnellen of verrijken?

Volgens Resing en Blok (2002) beschikt 6.4% van de leerlingen over een intelligentie op begaafd en 2.1% op zeer (of hoog-) begaafd niveau. In tegenstelling tot wat zij zelf vaak denken, heeft dus zonder twijfel iedere leerkracht te maken met (hoog)begaafde leerlingen. Deze leerlingen vragen om een aanpassing binnen het onderwijs: dit varieert van een kleine aanpassing (zodanige verrijking van de leerstof dat deze uitdagend is), tot ingrijpend aanpassen (versnelling, een apart programma, intensieve begeleiding). Een eerste stap is de erkenning van de aanwezigheid, en een juist beeld van deze leerlingen. “*Een leerling die door zijn*

<sup>20</sup> Doornekamp, Drent en Bronkhorst (1999)

<sup>21</sup> Bronkhorst & Drent (2001)

<sup>22</sup> Rogers & Kimpston (1992)

<sup>23</sup> De Hoop en Janson (1993), vertaling van ‘enrichment’, ‘sophistication’ en ‘novelty’ (Gallagher, 1985)

<sup>24</sup> Uitgeverij Kluwer

*ouders gedwongen wordt hoog te presteren”, of “Een leerling die niet met andere kinderen om kan gaan”<sup>25</sup> zijn geen adequate beschrijvingen van een (hoog)begaafde leerling, hoewel er natuurlijk (hoog)begaafde (en niet (hoog)begaafde) leerlingen zijn die door hun ouders gedwongen worden hoog te presteren of die niet met andere kinderen kunnen omgaan. Op het moment dat het functioneren van (hoog)begaafde leerlingen op juiste wijze geïnterpreteerd wordt, zijn de stappen die daarop moeten volgen niet meer dan logisch. Hoe eerder er op juiste wijze gereageerd wordt, hoe minder ingrijpende maatregelen nodig zullen zijn.*

Zoals al vermeld werd gaat het in het onderwijs aan (hoog)begaafden niet om de vraag of je moet versnellen of verrijken, maar meer op welke manier en op welk moment je (een van) beide moet doen. ‘Compacten en verrijken’ is altijd noodzakelijk en in veel gevallen zal een versnelling positief werken als onderdeel van het handelingsplan.

Om met name leerkrachten, maar ook ouders, te ondersteunen bij de beslissing of er (alleen) verrijkt moet worden of dat ook een groep overslaan gewenst is, biedt de VWL de mogelijkheid op objectieve wijze te kijken of, en in welke mate, een leerling aan bepaalde voorwaarden voldoet, die het welslagen van het overslaan van een groep waarschijnlijk maken.

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<sup>25</sup> Uitspraken van docenten uit het voortgezet onderwijs, op de vraag hoe ze een hoogbegaafde leerling zouden omschrijven (Hoogeveen, 2002).

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**Profielen van hoogbegaafde leerlingen**

	gedragskenmerken	herkenning	begeleiding van school
Profiel I De succesvolle leerling	<ul style="list-style-type: none"> <li>•perfectionistisch</li> <li>•goede prestaties</li> <li>•zoek bevestiging van de leerkracht</li> <li>•vermijdt risico</li> <li>•accepterend en conformerend</li> <li>•afhankelijk</li> </ul>	<ul style="list-style-type: none"> <li>•schoolprestaties</li> <li>•prestatietests</li> <li>•intelligentietests</li> <li>•nominatie door leerkracht</li> </ul>	<ul style="list-style-type: none"> <li>•versneld en verrijkt curriculum</li> <li>•ontwikkelen van persoonlijke interesses</li> <li>•vooraf testen, uitsluitend leerstof die nog niet beheerst wordt: leerstof inkorting</li> <li>•contact met ontwikkelingsgelijken</li> <li>•ontwikkeling van vaardigheden voor zelfstandig leren</li> <li>•mentor</li> <li>•begeleiding van school- en beroepsloopbaan.</li> </ul>
Profiel II de uitdagende leerling	<ul style="list-style-type: none"> <li>•corrigeert de leerkracht</li> <li>•stelt regels ter discussie</li> <li>•is eerlijk en direct</li> <li>•grote stemmingswisselingen</li> <li>•vertoont inconsistente werkwijzen</li> <li>•slechte zelfcontrole</li> <li>•creatief</li> <li>•voorkeur voor activiteit en discussie</li> <li>•komt op voor eigen opvattingen</li> <li>•competitief</li> </ul>	<ul style="list-style-type: none"> <li>•nominatie door medeleerlingen</li> <li>•nominatie door ouders</li> <li>•interviews</li> <li>•geleverde prestaties</li> <li>•nominatie door volwassene buiten het gezin</li> <li>•creativiteitstests</li> </ul>	<ul style="list-style-type: none"> <li>•tolerant klimaat</li> <li>•zoveel mogelijk bij passende leerkracht plaatsen</li> <li>•cognitieve en sociale vaardigheden trainen</li> <li>•directe en heldere communicatie met de leerling</li> <li>•gevoelens toestaan</li> <li>•mentor</li> <li>•zelfwaardering opbouwen</li> <li>•gedrag besturen met contracten</li> <li>•verdieping</li> </ul>
Profiel III de onderduikende leerling	<ul style="list-style-type: none"> <li>•ontkent begaafdheid</li> <li>•doet niet mee in programma's voor me er begaafde leerlingen</li> <li>•vermijdt uitdaging</li> <li>•zoekt sociale acceptatie</li> <li>•wisselt in vriendschappen</li> </ul>	<ul style="list-style-type: none"> <li>•nominatie door begaafde medeleerlingen</li> <li>•nominatie door ouders</li> <li>•prestatietests</li> <li>•intelligentietests</li> <li>•prestaties</li> </ul>	<ul style="list-style-type: none"> <li>•begaafdheid herkennen en adequaat opvangen</li> <li>•niet participeren in speciale activiteiten toestaan</li> <li>•sexe-rol modellen geven (vooral meisjes)</li> <li>•doorgaan met informeren over opleidings- en beroepsmogelijkheden</li> </ul>



Appendices

Profiel IV de drop-out	<ul style="list-style-type: none"> <li>•neemt onregelmatig deel aan onderwijs</li> <li>•maakt taken niet af</li> <li>•zoekt buitenschoolse uitdaging</li> <li>•verwaarloost zichzelf</li> <li>•isoleert zichzelf</li> <li>•creatief</li> <li>•bekritiseert zichzelf en anderen</li> <li>•werkt inconsistent</li> <li>•verstoort, reageert af</li> <li>•presteert gemiddeld of minder</li> <li>•defensief</li> </ul>	<ul style="list-style-type: none"> <li>•analyse van verzameld werk</li> <li>•informatie van leerkrachten uit het verleden</li> <li>•discrepantie tussen intelligentiescore en geleverde prestaties</li> <li>•inconsistenties is prestaties</li> <li>•creativiteitstests</li> <li>•nominatie door be- gaafde medeleerlingen</li> <li>•geleverde prestaties in niet-schoolse settings</li> </ul>	<ul style="list-style-type: none"> <li>•diagnostisch onderzoek</li> <li>•groepstherapie</li> <li>•niet-traditionele studievaardigheden</li> <li>•verdieping</li> <li>•mentor</li> <li>•niet-traditionele leerervaringen buiten de klas</li> </ul>
Profiel V de leerling met leer- en/of gedragsproblemen	<ul style="list-style-type: none"> <li>•werkt inconsistent</li> <li>•presteert gemiddeld of minder</li> <li>•verstoort, reageert af</li> </ul>	<ul style="list-style-type: none"> <li>•sterk uiteenlopende resultaten op onderdelen van een intelligentietest</li> <li>•herkenning door relevante anderen</li> <li>•herkenning door leerkracht met ervaring met onderpresteerders</li> <li>•interview</li> <li>•wijze van presteren</li> </ul>	<ul style="list-style-type: none"> <li>•plaatsing in programma voor be- gaafden</li> <li>•voorzien van benodigde bronnen</li> <li>•niet-traditionele leerervaringen</li> <li>•begin met onderzoek en ontdekkingen</li> <li>•tijd met ontwikkelingsgelijken doorbrengen (niet persé leeftijdgenoten)</li> <li>•individuele begeleiding</li> </ul>
Profiel VI de zelfstandige leerling	<ul style="list-style-type: none"> <li>•goede sociale vaardigheden</li> <li>•werkt zelfstandig</li> <li>•ontwikkelt eigen doelen</li> <li>•doet mee</li> <li>•werkt zonder bevestiging</li> <li>•werkt enthousiast voor passies</li> <li>•creatief</li> <li>•komt op voor eigen opvattingen</li> <li>•neemt risico</li> </ul>	<ul style="list-style-type: none"> <li>•bereikte schoolresultaten</li> <li>•producten</li> <li>•prestatietests</li> <li>•interviews</li> <li>•nominatie door leerkracht, klasgenoot, ouders, zichzelf</li> <li>•intelligentietests</li> <li>•creativiteitstests</li> </ul>	<ul style="list-style-type: none"> <li>•ontwikkelen van een lange-termijn plan voor studie</li> <li>•versneld en verrijkt curriculum</li> <li>•belemmeringen in tijd en plaats wegnemen</li> <li>•vooraf testen, uitsluitend leerstof die nog niet beheerst wordt: leerstof inkorting</li> <li>•mentor</li> <li>•begeleiding van school- en beroepsloopbaan.</li> <li>•vervroegde toelating tot vervolgopleiding</li> </ul>

Overgenomen uit Betts, G.T. & Neihart, M. (1988). Profiles of the Gifted and Talented. *Gifted Child Quarterly*, 32(2), 248-253. © vertaling: CBO



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## SUMMARY

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This dissertation reports four studies on the social-emotional effects of accelerating gifted students. The research concentrated on how and to what extent educational programs, in interaction with environmental and personal factors, influence the functioning of gifted students, in the short and the long run with a focus on social emotional characteristics.

Chapter 1, the Introduction, presents an overview of different theories of giftedness. Recent theories and models on giftedness adopt a multidimensional and dynamic view. The four studies reported in this dissertation are based on this view: gifted students can only transform their talents into performance if they have social emotional characteristics and a environment that support that process. Chapter 1 also presents an overview of different educational programs for gifted students, and elaborates on academic acceleration. The Introductory chapter ends with an overview of the research questions of this thesis and the different studies that are reported in the following chapters.

Chapter 2 reports a systematical review of 23 international studies on the effects of different types of educational programs for gifted students. The research question is how different educational programs influence social emotional characteristics and cognitive and social behavior of students. Most of the 23 studies that are included in the review evaluated enrichment programs: within class enrichment, pull-out programs, summer programs, gifted classes, and gifted schools. Analyses of the results reveal that almost all programs positively influence the cognitive and social functioning of students. A seemingly negative result is the finding that the (composite) self-concept of students enrolled in gifted program is less positive than the self-concept of non-participants. Following Shavelson, Hubner and Stanton's (1976) conception that self-concept is multidimensional and hierarchic, and composed of an academic and non-academic self-concept, we made

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a distinction between the academic and non-academic self-concept. This differentiation provides more insight into the relation between self-concept and the educational programs for gifted students. Students enrolled in gifted classes and gifted schools showed a less positive academic self-concept after participation, whereas these programs did not notably affect students' non-academic self-concept. Another pattern was found in pull-out programs and within-class enrichment programs: These programs had also a negative, yet smaller effect on students' academic self-concept, but their non-academic self-concept appeared to be less positive after intervention.

This difference between gifted classes and gifted schools on the one hand, and pull-out programs and within class enrichment programs on the other hand can be explained by the social comparisons theory (Festinger, 1954). People use significant others in their environment as reference in judging themselves. Adapting this framework, Marsh, Chessor, Craven, & Roche (1995) introduced the 'Big-Fish-Little-Pond-Effect' to explain the relation between gifted programs and self-concept. Placement of a highly gifted student in a class with non-gifted students often results in a very positive academic self-concept in gifted students. On the other hand, after being placed in a class with only, or with a high number of, gifted students, the student may realize that s/he is no longer unique. This can lead to a decline in his or her academic self-concept. Students in gifted classes or gifted schools compare themselves with other gifted students, whereas students in pull-out or within-class enrichment programs can also compare themselves with non-gifted students.

The 'Big-Fish-Little-Pond-Effect' may explain why participation in pull-out or within-class enrichment programs has a less negative effect on the academic self-concept than enrollment in gifted classes or gifted schools. But it also appears to come with a prize: The literature review indicated that being part of a regular class in combination with participation in a special program negatively affected the *non-academic* self-concept. This suggests that gifted students feel more at ease in groups with other gifted students. It should be noted, however, that a decline in self-

concept is not necessarily negative. It would be negative when the decline in self-concept is not realistic. If, however, a student had a non-realistic positive self-concept (by assuming, for example, to be always better than other students) and the self-concept changes to a more realistic one, because s/he notices that other students may have the same or even better academic abilities, this can be considered as positive.

Chapters 3 to 5 report empirical studies on the effects of acceleration, more specifically those forms of academic acceleration that imply that the student, after the intervention, is younger than her or his classmates. Participants of the studies accelerated by grade skipping, early entrance or telescoping curriculum. These forms of acceleration are most common in the Netherlands and other European countries (Mönks & Pflüger, 2005), and, at the same time, cause concern about the social-emotional development of students. These chapters focus on the effect of acceleration on gifted students' interpersonal characteristics (self-concept and learning attitude) and behavior (social adjustment, social status, and social contacts). These issues were addressed from different angles. Accelerated students were compared with non-accelerated, so older, classmates (Chapter 4), and accelerated gifted students were compared with non-accelerated gifted students (Chapter 5). Moreover, the perspectives of teachers (Chapter 3) on gifted students and gifted education, and those of peers (Chapter 4) and of the parents (Chapter 5) of gifted accelerated and gifted non-accelerated students were studied. Chapter 3 reports a study that investigated the attitude of teachers in secondary education toward acceleration and accelerated students. Teachers ( $n = 334$ ) of 31 secondary schools in the Netherlands gave their opinion about gifted education and, more specifically, the acceleration of gifted students. They filled in a questionnaire with open and multiple choice questions, and evaluated statements considering acceleration and accelerated students. It appears that teachers' attitude toward the cognitive functioning of accelerated students is positive. However, they worry about the social isolation and social competence of these students. Their worries are not in line with results of international studies, which show that academic acceleration

does not lead to academic or social emotional problems (Gross, 1992; Rimm & Lovance, 1992; Van Tassel-Baska, 1986). Remarkable is the fact that teachers with more experience with accelerated students express themselves more negatively concerning emotional problems and social isolation of accelerated students. This could mean that Dutch accelerated students are less social-emotionally competent than their non-Dutch peers. Another explanation could be that negative beliefs concerning acceleration make teachers see what they expect to see. In the discussion of this chapter this view is further elaborated. We also studied how information on giftedness and acceleration may influence teachers' attitudes and opinions. After they filled in a questionnaire measuring their attitudes, experiences and opinions about acceleration and accelerated students, teachers either attended an information meeting and were given written material, or received only written material. A control group of teachers did not attend the meeting and did not receive any written material. After the intervention, and one year after they had filled in the first questionnaire, teachers in each of the three conditions filled out the same questionnaire as before the intervention. The results showed that teachers who participated in the information meeting were less negative about the social-emotional functioning of gifted students than teachers who did not participate. These less negative attitudes and opinions are more in line with results of international scientific studies on social-emotional characteristics of accelerated students. Teachers who had received only the written material, and did not attend the information meeting, had not changed their attitudes and opinions. These findings suggest that specific and goal oriented information about acceleration and giftedness leads to a more realistic, and more positive, attitude of teachers toward gifted and accelerated students. This, in turn, may attribute to a more positive approach of these students (see also Karnes & Whorton, 1996).

Chapter 4 reports a study on the self-concept and social status of accelerated and non-accelerated students in first and second grade of secondary education. The self-concept, social status and behavioral reputations of 357 students of 18 secondary schools were studied when they started first grade, when they

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finished first grade and when they finished second grade. They filled in a questionnaire to measure their self-concept. Peer nominations were used to measure social status and behavioral reputation. The goal was to observe the effects of acceleration in primary school on the development of self-concept and social status in secondary school. The longitudinal design of this study enables a study of the social and emotional consequences of acceleration over a longer period. The results showed that accelerated students in their first two years in secondary school have a more positive academic self-concept than their classmates. On the other hand, it also appeared that the social self-concept of accelerated students, compared to their classmates, was less positive. This indicates that accelerated students have less self-confidence concerning social contacts. For girls, this appeared to be only temporal: At the end of second grade their social self-concept did not differ from the social self-concept of non-accelerated girls. The social self-concept of accelerated boys, however, differed even more from the social self-concept of non-gifted boys than was the case in first grade. Furthermore, the findings concerning accelerated students' social status were unexpectedly negative: accelerated students in the first two grades of secondary school were more often represented in the group of socially rejected students than their non-accelerated peers. In addition, they are nominated more frequently as conceited, and less frequently as cooperative, humorous, helpful, leading, and social. These findings are opposite to findings in the international literature on accelerated students. In interpreting the findings, we took gender differences into account. We found that accelerated girls' self-concept and social status increased during the first two years of secondary school. At the end of the second year, the social self-concepts of accelerated and non-accelerated girls were no longer different. The pattern in the accelerated boys was notably different. The difference between the accelerated and non-accelerated boys' self-concept and social status increased during the first two years of secondary school, and became increasingly negative for the accelerated boys. A possible explanation for this gender difference is that gifted adolescent girls focus their intelligence and creativity on socially accepted themes (see also Kerr, 2000). Another possible

explanation is that girls generally mature earlier than boys, and that by the end of the second year of secondary school most accelerated girls, in contrast to accelerated boys, can be seen as physically and social-emotionally adolescents just like their older class-mates.

Further research is necessary to clarify the unexpected negative results of acceleration on students' self-concept and social status. For now, it is important to take into account the possibility that an accelerated students in the first two year of secondary school in the Netherlands might have a less positive social status. To abolish academic acceleration as an educational program for gifted students would be no solution, as too many studies and experiences show the positive effects of acceleration and the negative effects of not accelerating a gifted student (Galloway & Porath, 1997; Gross, 2000). Therefore, teachers should not only be informed on giftedness and acceleration, but the social-emotional development of accelerated students requires special attention.

In Chapter 5, social-emotional characteristics of accelerated and non-accelerated students, all diagnosed as being gifted, were compared. Self-concept and social contacts of 148 accelerated and 55 non-accelerated gifted students were measured with a questionnaire and a diary. Parents of these students evaluated behavioral characteristics of their children. The personal factors gender and birth-order were studied, as well as environmental factors; class characteristics, gender and experience of the teacher and quality of parent-school contact. The most striking finding was that accelerated and non-accelerated gifted students barely differ from each other with regard to self-concept, behavioral characteristics and social contacts. Compared to non-accelerated students, accelerated students' grade and quality of parent-teachers contacts seemed to have less of an influence on the social-emotional functioning of accelerated students. This suggests that accelerated students are more stable in their social-emotional functioning. Obviously, this does not necessarily indicate a causal relation: The social-emotional stability of students has probably been (one of the) reason(s) to accelerate the student. Even so, acceleration did not negatively influenced the students' social-emotional



functioning. These findings coincide with those of most international studies of the functioning of gifted students.

Among the group of accelerated students, the amount of acceleration and the time passed since the acceleration varied. The influence of these factors was also taken into account. The results indicated that skipping more grades does not negatively influence social-emotional characteristics, and that not only the short-term but also the longer-term effects of acceleration appeared to be positive.

The 6<sup>th</sup> and final Chapter summarizes the most important findings of the empirical chapters, and draws general conclusions. It became clear that teachers in secondary education have a positive attitude concerning the cognitive abilities of accelerated students, but also that they expect accelerated students to have social problems, an expectation not supported by international literature and findings reported in Chapter 5 of this thesis. One of the topics discussed in Chapter 6 pertains to the difference in the findings of the studies reported in Chapter 4 vs. Chapter 5. In Chapter 4, accelerated students, in particular boys, appeared to experience more social-emotional problems, whereas in Chapter 5 no such problems were observed. Assuming that giftedness is a multi-dimensional and dynamic concept, possible explanations were considered that may explain this difference, for example the methodological design of the two studies. What differs in the two studies are the control groups: In Chapter 4, accelerated students were compared with their (older and probably non-gifted) classmates. In Chapter 5, however, the control group consisted of non-accelerated gifted students, and the average age of both groups was equivalent. It might well be the case that the difference in control-groups caused the different findings and that the social problems we found are not caused by acceleration, but by (an)other factor(s) that distinguish(es) the accelerants from their classmates. A factor that applies to all participants in Chapter 5 and the accelerated ones in Chapter 4, is that they are gifted. De Raad (2002) found that teachers think gifted students (if they are accelerated or not) have more social-emotional problems than non-gifted students. This finding supports the possible explanation that teachers' negative attitude is not

on acceleration, but on giftedness in general. Following this train of thought, a negative teacher attitude may have affected only the accelerated students in Chapter 4, but all students in Chapter 5. Another possible explanation for the negative findings in Chapter 4 can be found in the design of the study; in Chapter 4 classmates evaluated the social status of accelerated students, whereas in most studies in the literature, and in Chapter 5 of this thesis, students evaluate themselves. It is possible that students think or report that they are perceived more positively by their classmates than they actually are.

It is also important to emphasize on the fact that most studies concerning academic acceleration are non-European, and almost all North-American. This makes them less representative for the Dutch educational situation.

It should be realized that the moment in the children's school career may influence the outcomes of research. Bekkers (2005), who studied the same students that were studied in Chapter 4, but now in their last year of secondary school, shows that the differences in self-concept between accelerated and non-accelerated students as observed in their first two year in secondary school disappeared when these same students reached sixth grade. These findings support the conclusion of various international studies that long-term effects of acceleration are positive.

The final part of Chapter 6 presents recommendations for future research and educational implications. Longitudinal intervention studies that consider the relation and causality between personal, family and school factors are necessary. The most important recommendation for educational practice is that teachers receive a more extensive training in giftedness and gifted education including acceleration. Only with sufficient knowledge about, and insight into the specific characteristics of these students, as well as commitment of scientists, governments, teachers and parents, we can guarantee an optimal education for all students, including gifted students.

## SAMENVATTING

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In dit proefschrift wordt verslag gedaan van vier studies naar de effecten van onderwijsaanpassingen voor hoogbegaafde leerlingen. Het accent ligt daarbij op versnelling in de schoolloopbaan. Onderzocht is hoe en in welke mate onderwijsaanpassingen, in interactie met omgevings- en persoonsfactoren, van invloed zijn op het functioneren van hoogbegaafde leerlingen op korte en langere termijn. Daarbij is vooral gekeken naar sociaal-emotionele kenmerken.

In het eerste, inleidende, hoofdstuk worden verschillende theorieën van hoogbegaafdheid besproken. Hedendaagse theorieën en modellen gaan uit van een multidimensionale en dynamische visie op hoogbegaafdheid. Een dergelijke visie is ook in dit onderzoek het uitgangspunt: de mate waarin hoogbegaafde leerlingen hun talent kunnen tonen in prestaties is afhankelijk van sociaal emotionele kenmerken en omgevingsfactoren. Er wordt een overzicht gegeven van de verschillende onderwijsaanpassingen die beschikbaar zijn voor hoogbegaafde leerlingen, waarbij nader wordt ingegaan op versnelling in de schoolloopbaan. Vervolgens wordt een overzicht gegeven van de onderzoeksvragen waarop binnen dit proefschrift een antwoord is gezocht en de verschillende onderzoeken die in de hoofdstukken daarna beschreven worden.

In hoofdstuk 2 wordt verslag gedaan van een systematische review van 23 internationale onderzoeken naar onderwijsaanpassingen voor hoogbegaafde leerlingen. De vraag die daarbij gesteld wordt is hoe verschillende onderwijsprogramma's sociaal emotionele kenmerken en cognitief en sociaal gedrag van leerlingen beïnvloeden. In de meeste van de 23 onderzochte studies werden verrijkingsprogramma's geëvalueerd; verrijking binnen de klas, plusklassen, zomer programma's en speciale klassen en scholen voor hoogbegaafde leerlingen. Uit analyse van de resultaten blijkt dat bijna alle programma's een positieve invloed hebben op het cognitief en sociaal functioneren van leerlingen. Dit

sluit aan bij resultaten uit eerder internationaal onderzoek. Een schijnbaar negatief resultaat is de bevinding dat het (samengestelde) zelfconcept van deelnemers van een speciaal programma voor hoogbegaafden vaak minder positief is dan dat van niet-deelnemers. Uitgaande van Shavelson, Hubner en Stanton's (1976) idee dat zelfconcept multidimensionaal en hiërarchisch is en is samengesteld uit een academisch en niet-academisch zelfconcept, is een onderscheid gemaakt tussen het academische en niet-academisch zelfconcept. Dit onderscheid bleek tot meer inzicht te leiden in de relatie tussen zelfconcept en het type onderwijsprogramma. Leerlingen van speciale klassen en scholen voor hoogbegaafde leerlingen laten een minder positief academisch zelfconcept zien na deelname aan deze vorm van onderwijs, maar een niet of nauwelijks veranderd niet-academisch zelfconcept. In plusklassen en programma's waarbij in de klas zelf verrijkt werd, werd het tegenovergestelde gevonden: het effect van de interventie op het academisch zelfconcept blijkt klein te zijn, maar het niet-academisch zelfconcept is minder positief na de interventie.

Dit verschil tussen speciale klassen en scholen aan de ene kant en plusklassen en verrijking binnen de klas aan de andere kant kan verklaard worden vanuit de sociale vergelijkingstheorie (Festinger, 1954); mensen gebruiken significante anderen in hun omgeving als referentiekaders bij het vormen van een zelfbeoordeling. Marsh et al. (1995) introduceren in dit verband het Big-Fish-Little-Pond-Effect: hoogbegaafde leerlingen in een klas met niet-hoogbegaafde medeleerlingen zullen vaak een zeer positief academisch zelfconcept hebben. Als ze daarna in een speciale klas of school zitten met alleen hoogbegaafde leerlingen, en ze dus niet vanzelfsprekend de meest intelligente leerling zijn, kan dit leiden tot een minder positief academisch zelfconcept. Leerlingen in speciale klassen of scholen voor hoogbegaafde leerlingen vergelijken zichzelf met andere hoogbegaafde leerlingen, terwijl leerlingen die in een plusklas zitten, of een verrijkt programma krijgen aangeboden in een reguliere klas, zich ook kunnen vergelijken met niet-hoogbegaafde leerlingen. Dit verklaart het minder negatieve effect op het academisch zelfconcept. Het lijkt er echter op dat de combinatie van deel uitmaken

van een reguliere klas en deelnemen aan een speciaal programma, een negatief effect heeft op het niet-academische zelfconcept. Dit indiceert dat hoogbegaafde leerlingen zich sociaal meer op hun gemak voelen in een groep waar medeleerlingen ook hoogbegaafd zijn.

Het minder positief worden van het academisch zelfconcept is niet per definitie nadelig. Het is nadelig als het minder positieve zelfconcept niet realistisch is. Als een leerling echter aanvankelijk een niet-realistisch positief zelfconcept had (door bijvoorbeeld te denken altijd en overal academisch de beste te zijn), en dit zelfconcept wordt bijgesteld naar een meer realistisch zelfconcept (omdat zij of hij heeft gemerkt dat er andere leerlingen zijn met dezelfde of wellicht nog hogere capaciteiten), kan dit als positief beschouwd worden.

In de hoofdstukken 3 tot 5 worden empirische onderzoeken naar de effecten van versnelling gerapporteerd, meer specifiek die vormen van versnelling waardoor de leerling na de versnelling jonger is dan haar of zijn klasgenoten. De deelnemers aan het onderzoek waren versneld door het overslaan van een groep of klas, door een vervroegde instroom in groep 3, of door het doorlopen van meerdere schooljaren in kortere tijd. Deze vormen van versnelling zijn het meest frequent in Nederland en andere Europese landen (Mönks & Pflüger, 2005), en veroorzaken tegelijkertijd de meeste zorgen betreffende de sociaal-emotionele ontwikkeling van leerlingen. Binnen het onderzoek lag de nadruk op het effect van versnelling op intrapersonlijke kenmerken (zelfconcept en leerhouding) en gedrag (sociale aanpassing, sociale status, sociale contacten) van hoogbegaafde leerlingen. Er is rekening gehouden met verschillende gezichtspunten: er zijn docenten in het voortgezet onderwijs bevroegd, versnelde leerlingen zijn vergeleken met hun niet-versnelde (dus oudere) klasgenoten, en versnelde hoogbegaafde leerlingen zijn vergeleken met niet-versnelde hoogbegaafde leerlingen. Tenslotte zijn ook de ouders van hoogbegaafde versnelde en hoogbegaafde niet-versnelde leerlingen bevroegd.

In hoofdstuk 3 wordt een studie gerapporteerd waarin is onderzocht hoe docenten in het voortgezet onderwijs staan ten opzichte van versnelling en

versnelde leerlingen. Docenten (n = 334) van 31 scholen voor voortgezet onderwijs gaven hun mening over onderwijs voor hoogbegaafde leerlingen en, meer specifiek, het versnellen van hoogbegaafde leerlingen. Ze deden dat door het invullen van een enquête met open en gesloten vragen, en het evalueren van uitspraken met betrekking tot versnelling en versnelde leerlingen. Het blijkt dat docenten een positieve houding hebben als het gaat om het cognitief functioneren van versnelde leerlingen. Ze maken zich echter zorgen over sociale isolatie en de sociale competentie van deze leerlingen. Deze zorg is niet in overeenstemming met resultaten uit internationaal onderzoek, waaruit blijkt dat versnelling in de schoolloopbaan niet leidt tot academische of sociaal-emotionele problemen (Gross, 1992; Rimm & Lovance, 1992; Van Tassel-Baska, 1986). Opvallend is dat docenten met meer ervaring met versnelde leerlingen zich negatiever uitlaten als het gaat om emotionele problemen en sociale isolatie van versnelde leerlingen. Dit zou kunnen betekenen dat Nederlandse versnelde leerlingen sociaal-emotioneel minder competent zijn dan hun niet-Nederlandse leeftijdgenoten. Een andere verklaring zou kunnen zijn dat negatieve ideeën van docenten met betrekking tot versnelde leerlingen er voor zorgen dat ze zien wat ze verwachten te zien. In de discussie van dit hoofdstuk wordt hier verder op ingegaan.

Na het afnemen van de enquêtes werd een interventiestudie uitgevoerd, waarmee onderzocht werd of specifieke informatie over hoogbegaafdheid en versnelling de houding van docenten tegenover versnelde leerlingen verandert. Informatie werd alleen schriftelijk gegeven of in de vorm van een informatiebijeenkomst, waarin de schriftelijke informatie werd toegelicht. Uit de resultaten bleek dat docenten die deelnamen aan een informatiebijeenkomst zich daarna minder negatief uitlieten over het sociaal-emotioneel functioneren van versnelde leerlingen dan docenten die niet bij deze bijeenkomst aanwezig waren. Deze meer positieve mening is meer in overeenstemming met de resultaten van wetenschappelijk onderzoek bij versnelde leerlingen. Het alleen aanbieden van schriftelijk materiaal bleek niet te leiden tot veranderingen in mening. Op grond van de bevindingen wordt geconcludeerd dat specifieke en doelgerichte informatie over

versnelling en hoogbegaafdheid ertoe bijdraagt dat docenten een reëler, meer positief, beeld hebben van hoogbegaafde en versnelde leerlingen, wat naar verwachting een gunstig effect zal hebben op hun benadering van deze leerlingen (zie ook Karnes & Whorton, 1996).

In hoofdstuk 4 wordt een studie gerapporteerd waarin het zelfconcept en de sociale status van versnelde en niet-versnelde leerlingen in klas 1 en 2 van het voortgezet onderwijs is onderzocht. Van 357 leerlingen op 18 Nederlandse scholen voor voortgezet onderwijs werd het zelfconcept, de sociometrische status en gedragsreputaties gemeten op drie momenten: aan het begin van klas 1, aan het eind van klas 1 en aan het eind van klas 2. Het zelfconcept werd gemeten met behulp van een vragenlijst, de sociometrische status en gedragsreputaties door peernominaties. Op deze manier werd een antwoord gezocht op de vraag wat de effecten zijn van versnelling op de basisschool op de ontwikkeling van zelfconcept en sociale status op de middelbare school. De longitudinale opzet van deze studie geeft inzicht in de sociale en emotionele consequenties van versnelling over een langere periode. Uit de resultaten bleek dat versnelde leerlingen in de eerste twee jaar van het voortgezet onderwijs een positiever academisch zelfconcept hebben dan hun klasgenoten. Aan de andere kant blijkt het sociale zelfconcept van versnelde leerlingen in vergelijking met hun klasgenoten minder positief te zijn. Dit indiceert dat versnelde leerlingen minder zelfvertrouwen hebben als het gaat om sociale contacten. Wat betreft de versnelde meisjes lijkt dit slechts tijdelijk te zijn: aan het eind van de tweede klas wijkt hun sociale zelfconcept niet meer af van dat van niet-versnelde meisjes. Het sociale zelfconcept van versnelde jongens wijkt aan het eind van de tweede klas echter nog sterker af van dat van niet-versnelde jongens dan in de eerste klas het geval was. De bevindingen met betrekking tot de sociale status waren onverwacht negatief voor de versnelde groep: versnelde leerlingen in de eerste twee klassen van het voortgezet onderwijs zijn relatief veel sterker vertegenwoordigd in de groep van sociaal afgewezen leerlingen dan hun niet-versnelde klasgenoten. Zij worden minder vaak genoemd als één van de leukste klasgenoten, en vaker als één van de minst leuke klasgenoten. Daarnaast worden ze vaker genoemd als verwaand en

minder vaak als coöperatief, humoristisch, behulpzaam, leidend of sociaal. Deze bevindingen spreken internationale bevindingen met betrekking tot versnelde leerlingen tegen. Bij de interpretatie van de bevindingen wordt nader ingegaan op de gevonden sekseverschillen. Als opvallend wordt opgemerkt dat het zelfconcept en de sociale status van versnelde meisjes zich gedurende de eerste twee jaar in het voortgezet onderwijs positief ontwikkelen. Aan het eind van het tweede jaar zijn er geen verschillen meer tussen versnelde en niet-versnelde meisjes als het gaat om zelfconcept. Hoewel ook de sociale status van versnelde meisjes verbetert, is de interactie met de factor meetmoment statistisch niet significant. Het verschil tussen zelfconcept en sociale status van versnelde en niet-versnelde jongens wordt echter groter, ten nadele van de versnelde jongens. Als mogelijke verklaring voor dit verschil tussen jongens en meisjes wordt genoemd dat hoogbegaafde adolescente meisjes hun intelligentie en creativiteit voornamelijk richten op sociaal geaccepteerde thema's (zie ook Kerr, 2000). Een andere mogelijk verklarende factor voor de gevonden sekseverschillen is de leeftijd van de leerlingen: aan het eind van de tweede klas zitten de meeste niet-versnelde leerlingen, *en* de versnelde meisjes (die zich in het algemeen eerder lichamenlijk ontwikkelen dan jongens) in hun puberteit, dit in tegenstelling tot de meeste versnelde jongens. Deze versnelde jongens zullen daarom vooral fysiek meer in het oog springen.

Totdat verder onderzoek helderheid kan geven over deze onverwacht minder positieve resultaten is het van belang rekening te houden met de mogelijkheid dat versnelde leerlingen in de eerste twee jaar van het voortgezet onderwijs een minder positieve sociale status hebben. Niet versnellen lijkt geen oplossing te zijn; te veel studies en praktijkervaringen laten de positieve effecten van versnelling en de negatieve effecten van niet versnellen zien. Naast het beter informeren van onderwijsgeevenden met betrekking tot hoogbegaafdheid en versnelling, is extra aandacht voor de sociaal emotionele ontwikkeling van deze leerlingen geïndiceerd.

In hoofdstuk 5 worden sociaal-emotionele kenmerken van versnelde en niet-versnelde leerlingen, bij wie de diagnose hoogbegaafd is gesteld, met elkaar



vergeleken. Zelfconcept en sociale contacten van versnelde ( $n = 148$ ) en niet-versnelde ( $n = 55$ ) hoogbegaafde leerlingen werden gemeten met behulp van een vragenlijst en een dagboek. De ouders van deze leerlingen evalueerden gedragskenmerken van hun kinderen. De persoonlijke factoren geslacht en plaats in de kinderrij werden bestudeerd, evenals de omgevingsfactoren groeps- of klaskenmerken, geslacht en ervaring van de leerkracht, en de kwaliteit van het contact tussen school en de ouders. De meest opvallende bevinding is dat versnelde en niet-versnelde hoogbegaafde leerlingen nauwelijks van elkaar verschillen wat betreft zelfconcept, gedragskenmerken en sociale contacten. Wat daarnaast werd gevonden is dat het sociaal-emotioneel functioneren van versnelde hoogbegaafde leerlingen minder dan dat van niet-versnelde hoogbegaafde leerlingen beïnvloed lijkt te worden door de groep waarin de leerling zit en de kwaliteit van de relatie tussen school en ouders. Dit suggereert dat de versnelde leerlingen meer stabiel zijn in hun sociaal-emotioneel functioneren. Natuurlijk is er geen bewijs voor een causale relatie. Mogelijk is het feit dat deze leerlingen sociaal-emotioneel stabiel zijn (een van) de reden(en) geweest om hen te versnellen. Ook als dat zo is, lijkt de versnelling deze stabiliteit niet negatief beïnvloed te hebben. Deze bevindingen komen overeen met de meeste internationale onderzoeken naar het functioneren van hoogbegaafde leerlingen.

Binnen de groep van versnelde leerlingen was er variatie met betrekking tot het aantal klassen dat was overgeslagen en de tijd die sinds de versnelling was verstreken. De invloed van deze factoren werd onderzocht. De resultaten ondersteunen het idee dat het niet de versnelling is die sociale problemen veroorzaakt: meerdere keren een klas overslaan lijkt geen negatief effect te hebben op sociaal-emotionele kenmerken en het lange termijn effect van versnelling lijkt positief te zijn.

In het zesde en laatste hoofdstuk worden eerst de belangrijkste bevindingen uit de voorafgaande hoofdstukken op een rij gezet. Vervolgens worden op grond van deze bevindingen enkele algemene conclusies getrokken. Duidelijk is dat docenten in het voortgezet onderwijs een positieve houding hebben met betrekking

tot de cognitieve capaciteiten van versnelde leerlingen, maar ook dat ze sociale problemen verwachten bij versnelde leerlingen, een verwachting die vanuit de internationale literatuur en de bevindingen binnen dit onderzoek niet ondersteund wordt. Een belangrijk punt van discussie in hoofdstuk 6 is het verschil in bevindingen tussen de onderzoeken beschreven in hoofdstuk 4 en 5. Terwijl in hoofdstuk 5 geen aanwijzingen worden gevonden voor meer sociaal-emotionele problemen bij versnelde leerlingen dan bij niet-versnelde leerlingen, zien we daar wel indicaties voor in hoofdstuk 4; het sociale zelfconcept lijkt minder positief te zijn bij versnelde dan bij niet-versnelde leerlingen in hoofdstuk 4, terwijl in hoofdstuk 5 dit verschil tussen versnelde en niet-versnelde leerlingen niet wordt gevonden. Uitgaande van een multidimensionale dynamische visie op hoogbegaafdheid wordt gezocht naar mogelijke verklaringen voor dit verschil, zoals de houding van de onderwijsgevende en het verschil van de controlegroepen in beide onderzoeken. Ondersteund door onderzoek van De Raad (2002), waaruit bleek dat docenten denken dat hoogbegaafde leerlingen (onafhankelijk van het feit of ze al dan niet versneld zijn) meer sociaal-emotionele problemen hebben dan niet-hoogbegaafde leerlingen, wordt de mogelijkheid geopperd dat de negatieve houding van docenten niet de versnelling betreft, maar de hoogbegaafdheid in het algemeen. Dit zou het verschil tussen beide onderzoeken kunnen verklaren. In hoofdstuk 4, waar verschillen gevonden worden, worden versnelde leerlingen vergeleken met hun (oudere en waarschijnlijk niet hoogbegaafde) klasgenoten. In hoofdstuk 5 echter, waarin geen verschillen gevonden worden, bestaat de controlegroep uit niet-versnelde, hoogbegaafde, leerlingen, en is de gemiddelde leeftijd van beide groepen gelijk. Een andere mogelijke verklaring wordt gezocht in het feit dat in hoofdstuk 4 *klasgenoten* diegenen zijn die de sociale status van versnelde leerlingen evalueren, terwijl de meeste onderzoeken in de literatuur gebruik maken van zelfevaluatie. Het is mogelijk dat de leerlingen in deze studies denken of rapporteren dat ze meer sociaal geaccepteerd worden door hun medeleerlingen dan dat dat werkelijk het geval is. Eveneens wordt benadrukt dat de meeste onderzoeken met betrekking tot academische versnelling niet-Europees zijn, en bijna allemaal afkomstig uit de

Verenigde Staten. Dit maakt ze mogelijk minder representatief voor de onderwijssituatie in Nederland. Een andere belangrijke factor die genoemd wordt als mogelijk van invloed op de resultaten is het moment van meten. In het licht daarvan wordt het onderzoek van Bekkers (2005) genoemd, waarin het zelfconcept van de leerlingen uit hoofdstuk 4 nogmaals onderzocht werd in hun laatste jaar van het voortgezet onderwijs. Uit dit onderzoek blijkt dat de verschillen in zelfconcept tussen versnelde en niet-versnelde leerlingen, beschreven in hoofdstuk 4, niet meer voorkomen op het moment dat deze leerlingen in de zesde klas zitten. Deze bevindingen worden beschouwd als een ondersteuning van de conclusie uit meerdere internationale onderzoeken dat de lange termijn effecten van versnelling positief zijn.

In het laatste deel van Hoofdstuk 6 worden aanbevelingen gedaan voor toekomstig onderzoek en onderwijskundige implicaties. Gesteld wordt dat longitudinaal interventieonderzoek, waarbij vooral gekeken wordt naar de samenhang en causaliteit tussen de verschillende factoren (persoons-, gezins- en schoolfactoren), noodzakelijk is. De belangrijkste aanbeveling voor de praktijk is dat onderwijsgevendens beter opgeleid worden met betrekking tot deze specifieke groep leerlingen. Alleen met voldoende kennis en inzicht in deze leerlingen, en inzet van wetenschappers, overheden, onderwijsgevendens, en ouders, kan optimaal onderwijs worden geboden aan alle leerlingen, inclusief de hoogbegaafde leerlingen.



## DANKWOORD

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Op het moment dat Franz Mönks mij de kans gaf om medewerker te worden bij het Centrum voor Begaafdheidsonderzoek, begon voor mij een loopbaan binnen de wereld van hoogbegaafde leerlingen. Door hem heb ik de deze leerlingen leren kennen, die mij zo hebben gegrepen, dat zij mij onder andere hebben gebracht tot het schrijven van dit proefschrift. Ik wil dan ook op de eerste plaats mijn dank uitspreken aan hem.

Dat ik nog steeds deel uitmaak van het Centrum voor BegaafdheidsOnderzoek èn binnen deze setting aan dit proefschrift kon werken heeft niet alleen te maken met mijn interesse en betrokkenheid met de hoogbegaafde leerling, maar zeker ook met mijn geweldige CBO-collega's: Willy Peters was met Franz mijn eerste leermeester binnen het CBO. Zijn wijsheid, ideeën en vriendschap zijn een grote steun voor mij geweest en zijn dat nog steeds. Ook mijn andere collega's Els Schrover, Helene van Haren, Mariska Poelman, Cathelijne Leenders, Marianne van Overbeek en Liesbet Gommans hebben, ieder op eigen wijze, een rol gespeeld in dit zo lange proces, dat uiteindelijk heeft geleid tot dit resultaat. Hun begrip, humor, luisterend oor, betrokkenheid en zorg hebben mij door menig moeilijk moment heen geholpen.

Ik ben veel dank verschuldigd aan de scholen, ouders en kinderen die hebben willen meewerken aan dit onderzoek. Zij deden dit omdat ze hoopten dat het zou bijdragen aan een betere positie van hoogbegaafden in Nederland. Ik hoop van harte dat hun en mijn bijdrage daar inderdaad toe leidt en dat ze niet teleurgesteld worden.

Mijn copromotor Janet van Hell heeft mij de moed gegeven mijn onderzoek weer op te pakken. Haar (vele!) penkriebels in mijn conceptartikelen gaven blijk van haar betrokkenheid bij het schrijven van dit proefschrift. Haar kennis, consciëntieusheid, professionaliteit, werklust en zorg zijn een (weliswaar niet te evenaren) voorbeeld

voor mij. Ik wil haar, en mijn promotor Ludo Verhoeven, die er ondanks zijn drukke agenda was als dat nodig was, van harte bedanken.

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Het schrijven van een proefschrift is geweldig, zo geweldig dat het geweld aandoet aan je persoonlijk leven. Mensen moeten veel van je houden om dat zo lang van je accepteren. Ik ben in de gelukkige omstandigheden dat ik dergelijke mensen om mee heen heb, die mij, elk op eigen wijze, steunden. Vrienden en vriendinnen, familie, dank voor jullie aanhoudende belangstelling en medeleven. Mijn heel bijzondere vriendin, Madeleine Jochems zou één van mijn paranimfen zijn. Haar dood in 2004 was te groot voor woorden. In mijn gedachten zal ze er altijd bij zijn.

Pap en mam, wat heb ik jullie geduld op de proef gesteld. Jullie liefde, betrokkenheid en grenzeloos vertrouwen in mij (en jullie boosheid op eenieder die waagt dat een keer niet te hebben) is een groot geschenk. Dank jullie wel.

## Dankwoord

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Manuel, jouw liefde is onvoorwaardelijk en ongelooflijk. Dank daarvoor en 'seguimos haciendo camino al andar'.





## CURRICULUM VITAE

Lianne Hoogeveen werd geboren op 25 oktober 1960 te Wassenaar. In 1979 behaalde zij het Gymnasium-β diploma aan de Scholengemeenschap Jerusalem te Venray. Zij begon met haar studie psychologie aan de Katholieke Universiteit in Nijmegen, waar zij na haar kandidaatsexamen in 1983 koos voor de richting Ontwikkelingspsychologie. Lianne deed haar praktijkstage in Peru, waar ze een samen met medestudent Madeleine Jochems een cursus kinderopvang organiseerde voor vrouwen in de ‘pueblo joven’ Villa el Salvador (Lima) en onderzoek deed naar opvoedingsmethoden in sloppenwijken van Lima en boerengemeenschappen in Cajamarca. In 1988 behaalde zij het doctoraal examen Psychologie aan de Katholieke Universiteit Nijmegen. Na wederom een verblijf in Peru begon zij in 1991 als medewerker van het Centrum voor Begaafdheidsonderzoek (CBO), waarbij zij zich aanvankelijk voornamelijk bezighield met diagnostiek en advisering. Later werd zij betrokken bij de nascholingsopleiding voor onderwijsgeevenden ‘Specialist in Gifted Education’ (de “ECHA” cursus), een cursus voor ouders van onderpresterende hoogbegaafde jongeren, de verrijkingsklas ‘het CBO-Vooruitwerklab’, en scholingstrajecten in binnen- en buitenland. Zij was betrokken bij verschillende onderzoeksprojecten met betrekking tot hoogbegaafden in opdracht van en financieel ondersteund door het Ministerie van Onderwijs, Cultuur en Wetenschappen. Naast deze activiteiten is zij sinds juni 2007 als Universitair Docent verbonden aan het onderzoeksinstituut Pedagogische Wetenschappen (Orthopedagogiek van Leren en Ontwikkeling) van de Radboud Universiteit Nijmegen. Daar is zij docent binnen de cursussen ‘Variatie in Cognitie’ en ‘Hoogbegaafde Kinderen’ en de postinitiële opleiding ‘Specialist in Gifted Education’. Daarnaast begeleidt zij studenten in het Klinisch Practicum en scriptiestudenten. Bij het Instituut voor Leraar en School (ILS) van de Radboud Universiteit verzorgt zij het verdiepingsthema Hoogbegaafdheid.

