

# Teacher Attitudes Toward Academic Acceleration and Accelerated Students in the Netherlands

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*In a survey study, we investigated teacher attitudes toward acceleration and accelerated students in the Netherlands. Teachers (N = 334) 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.*

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

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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, their experience with accelerated students, and whether their attitudes 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 (as cited in Southern, Jones, & Stanley, 1993) defines acceleration as "progress through an educational program at rates faster, or at ages younger than conventional" (p. 387). A well-known form of acceleration is to skip a class. Rogers (2002) names various other forms of grade-based acceleration (e.g., nongraded classrooms, grade telescoping, and early admission to college) and subject-based acceleration (e.g., subject acceleration and Advanced Placement).

As long as acceleration has been used as an educational option, its potential virtues and drawbacks have been 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, Carlon & Rankin, 1997). On the contrary, researchers report academic (Rimm & Lovance, 1992; Vialle et al.), as well as social (Rimm & Lovance; Sayler & Brookshire) advantages of acceleration. For example, Sayler and Brookshire 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 (1992) observed that accelerated students have a higher self-esteem and are more motivated than nonaccelerated students. VanTassel-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 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; Heinbokel; McCluskey, Massey, & Baker, 1997; Southern & Jones, 1991a).

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 5-year-old daughter. The judicial decision was that the school and not the parents should decide on whether or not to accelerate a child.

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 4. Kindergarten (spanning 2 years) is obligatory and is integrated with primary school (spanning 6 years). Early entrance in grade 1 (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 Web site of the Dutch Ministry of Education, <http://www.minocw.nl/english/education>).<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 "paradoxical situation" (p. 208): Although teachers had a negative attitude toward skipping grades, they quite often applied this instructional practice.<sup>2</sup>

## **Purpose of the Present Study**

The purpose of this study is twofold. 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, and 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 first grade of 31 Dutch secondary schools (20 combined schools, 11 gymnasias)<sup>3</sup> in 28 villages and cities in the Netherlands. Three hundred and one teachers (men: 184; women: 109; unknown: 8), aged 22 to 64 ( $M = 43.97$ ,  $SD = 9.31$ ), from 21 schools, filled in the first questionnaire (sent out at the beginning of the school year, see Materials section). Two hundred and twenty-six teachers (men: 110; women: 83; unknown: 32), aged 23 to 65 ( $M = 44.29$ ,  $SD =$

9.41), from 21 schools, filled in the second questionnaire (sent out at the end of the school year). One hundred and ninety-three 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 (e.g., art, music;  $n = 18$ ). Some teachers taught more than one subject.

*Intervention.* Fifty of the above teachers taught in a school that received written information and where an information meeting took place; 36 of them were present at the meeting. Forty-three 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 (a) an introduction that explained the term acceleration and how the questionnaire should be filled in; (b) demographic items dealing with teaching experience in years, subject(s), and grades in which the teacher teaches, and teacher's sex and age; (c) 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); and (d) 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., Sayler & Brookshire, 1993; Townsend & Patrick, 1993; Vialle et al., 1997). The statements are presented in the Appendix.

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).

### *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>4</sup> Selected parents gave the name of the secondary school their son or daughter would attend the 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. One hundred and ninety-three (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 them to hand it out to the participating teachers. In nine schools, an information meeting took place in which a psychologist—a 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 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, and 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 27 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 having 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 they 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 they 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 as 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>5</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 1). 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 six factors. On the basis of the rotated factor matrix, four scales were formed, consisting of 18 of the 31 original statements (see Table 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 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).

*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.

**Table 1**  
**Rotated Factor Matrix of the 31 Statements**  
**About Acceleration**

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

*Note.* Extraction Method: Maximum Likelihood. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 10 iterations. Bolded numbers indicate the highest loading on the specific factor.

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

**Table 2**  
**Means and Standard Deviations of Selected Items on the Basis of Rotated Factor Matrix**  
**(Four Scales)**

Items	<i>M</i>	<i>SD</i>	Isolation	Social Competence	Motivation/ Achievement	Emotional Problems
2. Social-emotional problems of gifted children occur in a group with age-mates and less so in a group with older children	4.14	2.17		.69		
3. Acceleration leads to a better motivation in gifted students.	6.08	1.81			.77	
5. Acceleration prevents (mental) laziness.	5.97	2.14			.82	
7. Acceleration has a positive influence on social-emotional functioning.	3.65	1.91		.74		
13. Acceleration leads to good achievement in school.	4.81	1.71			.66	
14. Gifted students are less happy after acceleration.	4.56	1.55				.82
15. Gifted students function better socially after acceleration.	4.11	1.71		.74		
16. Gifted students function less well emotionally after acceleration.	5.27	1.80				.58
18. Acceleration is no solution for underachievement.	5.51	2.08			.61	
19. Accelerated students have better social relationships.	3.71	1.63		.76		
20. Accelerated students show more behavioral problems than nonaccelerated students.	5.03	1.80				.74
21. Accelerated students feel socially isolated.	5.46	1.80			.59	
22. Accelerated students do not have more emotional problems than nonaccelerated students.	4.54	1.84				.42
26. It is difficult for an accelerated student to be the youngest in class, as well as the smartest.	6.58	2.01	.72			
27. Students of an "older" class will not accept an accelerated student.	4.80	1.77	.66			
28. An accelerated student will run into problems in puberty because other students are more "ahead."	6.21	1.82	.72			
29. An accelerated student will be less independent than is expected of students in his/her grade.	4.43	1.92	.39			
30. An accelerated student will end up in an unusual position because of his/her younger age.	5.97	1.94	.77			

**Table 3**  
**Teachers' Opinions About Accelerated Students**

Opinions about accelerated students	<i>M</i>	<i>SD</i>
Social competence	3.90	1.46
Isolation	5.60	1.35
School motivation and achievement	5.34	1.47
Emotional problems	5.16	1.32

*Note.* Rating scales range from 1–9.

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 ( $p < .001$  for both).

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 with accelerated students ( $M = 4.29$ ,  $SD = 1.66$ ) 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 did not differ 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 ( $p < .003$  or better for both). 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 ( $p < .002$  or better for both). 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 ( $p < .001$  for both). 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 ( $p < .001$  for both). 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*

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 seven schools where an information meeting took place and where written information was distributed) and a control group (i.e., teachers of nine schools where no information meeting took place).<sup>6</sup>

A series of 2 (intervention: meeting, no meeting) by 2 (test: pretest/1st questionnaire, posttest/2nd 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-sub-

jects variable and test was treated as the repeated measure. The mean scores are presented in Table 4.

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 in schools with an information meeting were more positive about the social competence of accelerated students after the intervention ( $M_{\text{pre}} = 4.03, SD = .42$  and  $M_{\text{post}} = 4.73, SD = .96$ ), whereas the attitude of their colleagues on schools without an information meeting remained the same ( $M_{\text{pre}} = 3.88, SD = .50$  and  $M_{\text{post}} = 3.73, SD = .32$ ).

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 in schools at which an information meeting was held were somewhat more positive about accelerated students' school motivation and achievement after the intervention ( $M_{\text{pre}} = 5.24, SD = .39$  and  $M_{\text{post}} = 5.56, SD = .59$ ) than their colleagues at schools without a meeting ( $M_{\text{pre}} = 5.33, SD = .59$  and  $M_{\text{post}} = 4.81, SD = .76$ ).

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 ( $M_{\text{pre}} = 5.12, SD = .40$  and  $M_{\text{post}} = 4.20, SD = 1.08$ ), in contrast to teachers on schools without an information meeting ( $M_{\text{pre}} = 5.18, SD = .33$  and  $M_{\text{post}} = 5.66, SD = 1.14$ ).

**Table 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>
Social competence	T1	4.03	.42	3.88	.50
	T2	4.73	.96	3.73	.96
Isolation	T1	5.30	.33	5.21	1.04
	T2	5.31	1.76	5.97	.79
Motivation/achievement	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

## 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, the teachers considered this sometimes (77%) or often/always (17%) a useful option. 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 toward acceleration than Southern and Jones (1991b) observed in their review of the literature on teacher attitudes in the U.S. 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. 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 Ohio. Southern et al. 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, 2005a) showed that these stu-

dents indeed had a less positive social status than their classmates. However, in a study where highly intelligent ( $IQ > 129$ ) accelerated and nonaccelerated age-mates were compared with respect to their peer contacts and self-concept, no differences were found (Hoogeveen, van Hell, & Verhoeven, 2005b). 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 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—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; VanTassel-Baska, 1986).

Our intervention study indicates that specific and targeted information on acceleration and giftedness may indeed influence teachers' opinions on accelerated students. Additionally, 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 are 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 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 the information reaching 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" (Acceleration Desirability List [VWL]; Hoogeveen, van Hell, &

Verhoeven, 2003). This 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, although 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 who 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 intraindividual variation in harms and benefits associated with acceleration, which is a cardinal question to be answered in future research.

## References

- Benbow, C. P. (1991). Meeting the needs of gifted students through the use of acceleration. In M. C. Wang, M. C. Reynolds, & H. J. Walberg (Eds.), *Handbook of special education: Research and practice* (pp. 23–36). Elmsford, NY: Pergamon Press.
- Benbow, C. P. (1992). Progress in gifted education: Everywhere but here! *Gifted Child Today*, 15, 2–8.
- Brophy, J. E., & Good, T. L. (1974). *Teacher-student relationships: Causes and consequences*. Oxford, England: Holt, Rinehart, & Winston.
- Davison, J. (1996). Meeting state mandates for gifted and talented: Iowa teacher preparation programs. *Roeper Review*, 19, 41–43.
- Gallagher, J. J. (1993). Current status of gifted education in the United States. In A. Heller, F. J. Mönks, & A. H. Passow (Eds.), *International handbook of research and development of giftedness and talent* (pp. 755–770). Oxford, England: Pergamon Press.
- Gross, M. (1992). The use of radical acceleration in cases of extreme intellectual precocity. *Gifted Child Quarterly*, 36, 91–99.

- Hanninen, G. E. (1988). A study of teacher training in gifted education. *Roeper Review*, *10*, 139–144.
- Harris, M. J., Milich, R., & McAninch, C. B. (1998). When stigma becomes self-fulfilling prophecy: Expectancy effects and the causes, consequences, and treatment of peer rejection. In J. Brophy (Ed.), *Advances in research on teaching: Expectations in the classroom* (pp. 243–272). Greenwich, CT: JAI Press.
- Heinbokel, A. (1997). Acceleration through grade skipping in Germany. *High Ability Studies*, *8*, 61–77.
- Heller, K. A. (1992). Giftedness research and education of the gifted and talented in Germany. In F. J. Mönks, M. W. Katzko, & H. W. van Boxtel (Eds.), *Education of the gifted in Europe: Theoretical and research issues* (pp. 71–85). Amsterdam: Swets & Zeitlinger.
- Hoogeveen, L. (2000, August). *Academic acceleration in Dutch schools: The social-emotional functioning of accelerated and non-accelerated gifted children and adolescents*. Paper presented at the 7th ECHA Conference, Debrecen, Hungary.
- Hoogeveen, L., van Hell, J. G., & Verhoeven, L. (2003). *De versnellingswenselijkheidlijst* [The acceleration desirability list]. Nijmegen, The Netherlands: Center for the Study of Giftedness (CBO).
- Hoogeveen, L., van Hell, J. G., & Verhoeven, L. (2005a). *Self-concept and social status of accelerated students in their first and second year of secondary school*. Manuscript in preparation.
- Hoogeveen, L., van Hell, J. G., & Verhoeven, L. (2005b). *Self-concept and peer-contacts of highly intelligent accelerated and non-accelerated children and adolescents*. Manuscript in preparation.
- Jussim, L., Smith, A., Madon, S., & Palumbo, P. (1998). Teacher expectation. In J. Brophy (Ed.), *Advances in research on teaching: Expectations in the classroom* (Vol. 7, pp. 1–48). Greenwich, CT: JAI Press.
- Karnes, F. A. & Whorton, J. E. (1996). Teacher certification and endorsement in gifted education: A critical need. *Roeper Review*, *19*, 54–56.
- McCluskey, K. W., Massey, K. J., & Baker, P. A. (1997). Early entrance to kindergarten: An alternative to consider. *Gifted and Talented International*, *12*, 27–30.

- Ministerie van Onderwijs, Cultuur en Wetenschap [Ministry of Education, Culture and Science] (2001). *Primair onderwijs. Gids voor ouders en verzorgers* [Primary education. Guide for parents and caretakers]. Den Haag, The Netherlands: Ministerie van Onderwijs, Cultuur en Wetenschap.
- Rimm, S. B., & Lovance, K. J. (1992). How acceleration may prevent underachievement syndrome. *Gifted Child Today*, 15, 9–14.
- Rogers, K. B. (2002). Effects of acceleration on gifted learners. In M. Neihart, S. M. Reis, N. M. Robinson, & S. M. Moon (Eds.), *The social and emotional development of gifted children. What do we know?* (pp. 3–12). Waco, TX: Prufrock Press.
- Sayler, M. F., & Brookshire, W. K. (1993). Social, emotional, and behavioral adjustment of accelerated students, students in gifted classes, and regular students in eighth grade. *Gifted Child Quarterly*, 37, 150–154.
- Southern, W. T., & Jones, E. D. (1991a). *The academic acceleration of gifted children*. New York: Teachers College Press.
- Southern, W. T., & Jones, E. D. (1991b). Objections to early entrance and grade skipping. In W. T. Southern & E. D. Jones (Eds.), *The academic acceleration of gifted children* (pp. 51–73). New York: Teachers College Press.
- Southern, W. T., Jones, E. D., & Fiscus, E. D. (1989). Practitioner objections to the academic acceleration of gifted children. *Gifted Child Quarterly*, 33, 29–35.
- Southern, W. T., Jones, E. D., & Stanley, J. C. (1993). Acceleration and enrichment: The context and development of program options. In K. A. Heller, F. J. Mönks, & A. H. Passow (Eds.), *International handbook of research and development of giftedness and talent* (pp. 387–409). Oxford, England: Pergamon Press.
- Swiatek, M. A. (1993). A decade of longitudinal research on academic acceleration through the study of mathematically precocious youth. *Roepers Review*, 15, 120–124.
- Townsend, M. A. R., & Patrick, H. (1993). Academic and psychosocial apprehensions of teachers and teacher trainees toward the educational acceleration of gifted children. *New Zealand Journal of Educational Studies*, 28, 29–41.
- Van Boxtel, H. (1987). *Hoogbegaafden in het basisonderwijs*. [Gifted

- students in primary education]. Nijmegen, The Netherlands: Hoogveld Instituut/Katholieke Universiteit Nijmegen.
- VanTassel-Baska, J. (1986). Acceleration. In C. J. Maker (Ed.), *Critical issues in gifted education* (pp. 179–196). Rockville, MD: Aspen Publishers.
- Vialle, W., Ashton, T., Carlon, G. & Rankin, F. (1997, July/August). *Acceleration: The good, the bad and the ugly*. Paper presented at the 12th Conference of the World Council for Gifted and Talented Children, Seattle, Washington.

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### Endnotes

<sup>1</sup>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).

<sup>2</sup> How often students are accelerated in the Netherlands is not exactly known. In a study with 998 recently enrolled students from

30 schools of secondary education, we found that 13% of the children were accelerated in primary school (Hoogeveen, van Hell, & Verhoeven, 2005a).

<sup>3</sup> Combined schools offer (1) pre-vocational secondary education (VMBO), (2) senior general secondary education (HAVO), and (3) pre-university education (VWO). Gymnasias offer pre-university education, including the classical languages Latin and/or Greek.

<sup>4</sup> 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.

<sup>5</sup> 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.

<sup>6</sup> Schools from which teachers did not return both questionnaires were excluded.

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## Appendix

### Questions and Statements of Questionnaires

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

#### Questionnaire questions

1. Do you think a special approach for 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 of more accelerated students? (answer options: yes, no, unknown)
4. Your experiences with these accelerated students were . . . (answer options: very positive, positive, negative, very negative)

#### Questionnaire statements

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 nonaccelerated 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 nonaccelerated students.
21. Accelerated students feel socially isolated.
22. Accelerated students do not have more emotional problems than nonaccelerated students.
23. Acceleration is an adequate intervention for the development of a gifted student.
24. Accelerated students are less accepted than nonaccelerated students.
25. The self-concept of accelerated gifted students is equal to or more positive than the self-concept of nonaccelerated 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.

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Additional questions of second 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.