

A Sample of Gifted and Talented Educators' Attitudes About Academic Acceleration

Journal of Advanced Academics

24(1) 27–51

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DOI: 10.1177/1932202X12472491

joaa.sagepub.com



Del Siegle¹, Hope E. Wilson²,
and Catherine A. Little¹

Abstract

Despite extensive research supporting its use, including the 2004 publication of *A Nation Deceived*, acceleration is an underutilized strategy for meeting the academic needs of gifted and talented students. Parents' and educators' attitudes and beliefs about acceleration influence the extent to which it is implemented in schools. This study investigated gifted and talented educators' attitudes toward acceleration using a 7-point rating scale measuring concerns about acceleration, beliefs about acceleration, and support for specific acceleration strategies. Data indicated there were no differences in attitudes among teachers from rural, suburban, or urban school districts. Overall, the least popular acceleration strategies were also the easiest to implement, but caused the greatest change in students' environments (i.e., grade-skipping and early entrance to kindergarten). As expected, the educators were most troubled by social issues and least concerned about academic issues related to acceleration.

Keywords

acceleration, teachers' attitudes, gifted, talented

Acceleration, enrichment, or a combination of them is the basis for most services for gifted students. Although some aspects of enrichment, such as introducing students to a topic earlier and at great depth, could be considered accelerative (Davis, Rimm, &

¹University of Connecticut, Storrs, USA

²University of North Florida, Jacksonville, USA

Corresponding Author:

Del Siegle, Department of Educational Psychology, University of Connecticut, 249 Glenbrook Road Unit 3064, Storrs, CT 06269-3064, USA.

Email: del.siegle@uconn.edu

Table 1. 12 Reasons Why Acceleration Isn't Accepted in America.

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1. Teachers lack familiarity with research evidence on acceleration
 2. K-12 educators do not feel confident in using acceleration
 3. Acceleration runs counter to personal beliefs
 4. Age, not readiness, has become the primary determinant for grade placement
 5. Most teachers believe that not accelerating is less harmful and a safer option than accelerating
 6. Acceleration is not taught in colleges of education
 7. Teachers and parents see acceleration as hurrying (pushing) children through childhood
 8. Educators fear that accelerated children will not adjust socially to the new class
 9. Individual kids are less important than equal opportunity for all
 10. Teachers may believe that accelerating a child will diminish the self-esteem of other students
 11. Accelerated students will have gaps in knowledge
 12. While the number of unsuccessful cases of acceleration is limited, they are memorable and influence opinions
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Note: Adapted from "A nation deceived: How schools hold back America's brightest students," by N. Colangelo, S. G. Assouline, & M. U. M. Gross, 2004, Iowa City: University of Iowa. Copyright 2004 by the The Connie Belin & Jacqueline N. Blank International Center for Gifted Education and Talent Development.

Siegle, 2011), acceleration is generally defined as moving "students through an educational program at rates faster, or at younger ages, than typical" (Colangelo, Assouline, & Gross, 2004, p. xi). Despite meta-analyses documenting research over the past half century supporting academic acceleration (Kulik, 2004; Rogers, 2004), it remains a controversial and underutilized strategy (National Association for Gifted Children [NAGC] 2009; Southern & Jones, 2004). In *A Nation Deceived*, Colangelo et al. (2004) proposed 12 reasons why acceleration was not accepted in American schools (see Table 1). These reasons reflect more concern about "grade-based" types of acceleration that move students through school more quickly than about "subject-based" forms that allow earlier access to content; reasons range from ignorance about the research to a bias favoring placement by age.

The purpose of this study was to explore administrator and teacher attitudes about acceleration, using the 12 reasons outlined in Table 1 and an earlier instrument (Southern, Jones, & Fiscus, 1989) as a theoretical basis for a survey. Our purpose was not to determine whether acceleration was an effective strategy; the effectiveness of acceleration has been extensively documented. Our purpose, rather, was to determine why gifted educators support or do not support various acceleration options. By understanding educators' attitudes, we can better inform policy makers and advocates on how to promote positive attitudes toward acceleration. Ultimately, this will help the field of gifted education to implement the recommendations in *A Nation Deceived* (Colangelo, Assouline, & Gross, 2004) by addressing educators' concerns directly.

Background

As early as 1992, VanTassel-Baska noted that “perhaps more has been written about the efficacy of accelerative practices with the gifted than about any other single educational intervention with any population” (p. 69). She went on to cite 25 years of research supporting acceleration. During the almost 2 decades since, research evidence supporting acceleration has continued to accumulate (for reviews of research, see Colangelo, Assouline, & Gross, 2004; Rogers, Young, & Lonergan, 2008). Despite the evidence, advocates remain concerned that teachers continue to hold negative attitudes and that schools remain reluctant to implement acceleration strategies.

Recent research (Brewer & Landers, 2005; Gross & vanVliet, 2005; Wells, Lohman, & Marron, 2009), as well as earlier work (Brody, Assouline, & Stanley, 1990; Lupkowski-Shoplik & Assouline, 1994; Olszewski-Kubilius, 1995, 1998; Poelzer & Feldhusen, 1996; Saylor & Brookshire, 1993; Worrell, Szarko, & Gabelko, 2001), has demonstrated the academic progress of accelerated students. Accelerated students do not just keep up academically with their older classmates; they actually often perform better (Wells et al., 2009). Research has shown advanced academic achievement for accelerated students across various acceleration strategies, including special schools (Harris, 1990; McHugh, 2006), advanced placement (AP) classes (Burney, 2008; Espenshade, Hale, & Chung, 2005), curriculum compacting (Reis, Westberg, Kulikowich, & Purcell, 1998), early college entrance (Brody et al., 1990; Cornell, 1994; Gross & vanVliet, 2005; Muratori, Colangelo, & Assouline, 2003; Olszewski-Kubilius, 1995), early entrance to school (Gross, 1999; McCluskey, Baker, & Massey, 1996), individualizing curriculum (Callahan & Smith, 1990), international baccalaureate (IB) programs (Poelzer & Feldhusen, 1996; Shaunessy, Suldo, Hardesty, & Shaffer, 2006; Taylor & Porath, 2006), radical grade-skipping (Gross, 2006), and subject area acceleration (Kolitch & Brody, 1992).

Studies of academic outcomes of acceleration have demonstrated not only positive academic achievement results but also positive attitudes about school and choices about further educational pursuits. For example, early kindergarten entrants entered graduate school at higher rates than like-ability, nonaccelerated peers (Noble, Robinson, & Gunderson, 1993; Sethna, Wickstrum, Boothe, & Stanley, 2001), and these students tended to have higher grade point averages (GPAs; Janos & Robinson, 1985). Students in AP classes reported higher satisfaction with school and higher achievement than intellectually matched peers who did not participate in AP (Bleske-Rechek, Lubinski, & Benbow, 2004). Hoogeveen, van Hell, and Verhoeven (2009) found that accelerated students showed higher math and school self-concept than non-accelerated peers, although there were no differences in general self-concept between the two groups.

Nevertheless, concerns about accelerative practices persist, particularly “grade-based” practices like early entrance and grade skipping. Rambo and McCoach (2012) found that teachers gave more weight to potential negative outcomes of acceleration

than they gave to positive outcomes. These concerns and the responsive research have focused not only on academic outcomes but also on the implications of acceleration for social and emotional development and for students' involvement in extracurricular activities.

Social and Emotional Effects

Cornell, Callahan, Bassin, and Ramsay (1991) reviewed studies on affective development of accelerated students and found less conclusive results than those found for academic effects. This may be due to difficulties in defining constructs of emotional adjustment (Robinson, 2004), variety of comparison groups (Marsh, 1987), and quasiexperimental designs in which students are accelerated in response to existing problems (Robinson, 2004). Cornell et al. (1991) found that different acceleration options and studies on affective development produced mixed results from small negative to small positive effects. They noted that

it is no longer even useful to debate whether acceleration does or does not have an adverse effect on affective development. Instead, research could more profitably focus on determining for whom acceleration might be desirable, and for whom it might be detrimental. (p. 96)

Several studies have shown that accelerated students did not experience greater emotional problems than peers (Gagné & Gagneir, 2004; Gross, 1994). Richardson and Benbow (1990) found no differences in self-acceptance of accelerated and nonaccelerated academically talented students. Rogers (1992) noted that early entrance to kindergarten had a positive effect on social and emotional indices. In a study of 600 gifted students, Plucker and Taylor (1998) found no self-concept differences between grade accelerated and nonaccelerated students. One study found that early college entrance may negatively affect self-concept, possibly due to comparison with highly gifted classmates (Lupkowski, Whitmore, & Ramsey, 1992). Nevertheless, research indicates that acceleration does not have a negative effect on most students' emotional well-being, despite many educator concerns (Colangelo, Assouline, & Gross, 2004; Townsend & Patrick, 1993).

Research on social development of accelerated students shows varied results. Hoogeveen et al. (2009) found that accelerated secondary students had lower self-concept for same- and opposite-sex relationships than nonaccelerated peers, and that they were less likely to be ranked among the most liked students and more likely to be ranked among the least popular students. Another study found that females in an early college entrance program had more social conformity and solitary activity than comparison groups and higher levels of dissatisfaction with their social lives (Ingersoll & Cornell, 1995). On the other hand, Richardson and Benbow (1990) and Gross (1994) found that accelerated students reported high levels of social acceptance. In studies of students entering college early, accelerated students had similar social levels

compared with similar students who did not enter college early (Janos, Robinson, & Lunneborg, 1989), developed social networks with peer groups (Janos et al., 1988), and showed no differences in social adjustment compared with nonaccelerated university students (Robinson & Janos, 1986).

Caplan, Henderson, Henderson, and Fleming (2002) showed that adjustment to early entrance programs may be closely related to individual self-concept. Noble and Childers (2008) noted that early entrance students were better adjusted when they participated in intellectual preparation involving supportive faculty and a peer group. Similarly, grade-skipping benefits are seen to be linked to identifying good candidates systematically (Colangelo, Assouline, & Lupkowski-Shoplik, 2004) and ensuring teacher and parent support (Whitlock & DuCette, 1992).

Many accelerated students believe that they have greater emotional and social maturity because of their experiences with acceleration (Noble, Arndt, Nicholson, Sletten, & Zamora, 1999). Numerous other studies concerning the social and emotional lives of accelerated students also show no harmful effects of acceleration (Cornell et al., 1991; Gross, 1992, 1994; Janos, 1987; Janos et al., 1988; Janos et al., 1989; Robinson & Janos, 1986; Saylor & Brookshire, 1993).

Longitudinal Effects

The Study of Mathematically Precocious Youth (SMPY) and similar talent search programs have a long history of studying the longitudinal effects of acceleration among highly talented students (Barnett & Durden, 1993; Benbow, Lubinski, Shea, & Eftekhari-Sanjani, 2000; Brody et al., 1990; Kolitch & Brody, 1992; Lubinski & Benbow, 2006; Lubinski, Webb, Morelock, & Benbow, 2001; Richardson & Benbow, 1990; Stanley, 1973, 1985, 1988; Stanley & McGill, 1986; Swiatek, 2002; Swiatek & Benbow, 1991a, 1991b, 1992). This rich collection of data indicates that early attempts at acceleration were successful (e.g., Stanley, 1973), and the history of Talent Searches has continued to show academic benefits of acceleration (e.g., Stanley, 1988; Swiatek, 2002). Specifically, studies have found that participants in accelerated summer programs had greater academic achievements than students who qualified but did not participate (Barnett & Durden, 1993; Kolitch & Brody, 1992; Swiatek & Benbow, 1991b). In addition, accelerated SMPY students showed no differences in socioemotional indices (Brody & Benbow, 1987; Richardson & Benbow, 1990; Swiatek, 2002; Swiatek & Benbow, 1991b) and reported generally positive feelings about acceleration experiences (Swiatek & Benbow, 1992).

In a 20-year longitudinal study, Gross (2006) found that Australian students with high IQs (above 160) who had been accelerated 2 years or more had higher levels of life satisfaction and positive love and social relationships compared with students who had been accelerated 1 year or less. Similar case studies have also concluded that multiple grade acceleration results in more intellectual stimulation and closer social relationships for students with extremely high intelligence and that nonacceleration has maladaptive consequences (Gross, 1992, 1994, 2005).

Involvement in Extracurricular Activities

Overall, research shows that accelerated students participate in extracurricular activities at least as much as their nonaccelerated peers. As early as 1963, Hobson (1963) found that students who had entered school early were more involved in leadership and extracurricular activities. Butcher (2003) interviewed successful accelerated students in math and science and found that they were involved in activities outside school. Chilton (2001) found that, compared with nonaccelerated peers, students accelerated in math were more likely to hold leadership positions and participate in math clubs and as likely to participate in other extracurricular activities. By and large, accelerated students have access to the same opportunities for extracurricular involvement (Colangelo, Assouline, & Gross, 2004). Even students who enter college early at residential schools can participate in prom, homecoming, student council, and sports (Noble & Drummond, 1992).

Educator and Parent Concerns

Despite the ongoing collection of evidence supporting acceleration, concerns about accelerative approaches have persisted among educators and parents, as demonstrated in several studies across recent decades. Teachers and parents are often reluctant to have gifted students enter school early, particularly because of social and emotional concerns. McCluskey, Massey, and Baker (1997) reported that teachers held negative views of student academic achievement for students who were allowed to enter kindergarten 6 months early, but other evidence suggests that many parents and teachers are most concerned with the social and emotional domains when considering early entrance (Sankar-Deleeuw, 2002). Southern et al. (1989) found that teachers were more concerned with social and emotional issues than with academic achievement.

Perceptions about acceleration vary depending on the groups surveyed. Jones and Southern (1992) found that rural school districts were less likely to use acceleration than urban districts and expressed more negative perceptions. Townsend and Patrick (1993) used Southern et al.'s (1989) scale to measure attitudes of 152 experienced teachers and 140 teacher trainees toward academic acceleration in New Zealand, finding that experienced teachers were more concerned than trainees about lost leadership experiences for accelerated students. Overall, their respondents were "moderately positive though relatively conservative in their views" (p. 29) and expressed greater concern about social and emotional effects than academic effects.

Bain, Bliss, Choate, and Brown (2007) surveyed 285 undergraduates in prerequisite classes for teacher education. A large majority of their sample felt that grade-skipping would have a negative effect on students' socialization skills. Hoogeveen, van Hell, and Verhoeven (2004) reported similar results in the Netherlands, but also found that teachers who received written information and attended an informational meeting on acceleration expressed more positive attitudes than those who had not received the information nor attended the meeting.

School Policies

In addition to teacher and parent attitudes about acceleration, school and district policies also prevent acceleration in many situations. In a 1993 report, Archambault et al. (1993) found that more than 70% of third- and fourth-grade teachers were prevented by school policy from accelerating students to the next grade. Another study found that while only 15% of schools had formal policies allowing grade-skipping, 57% had informal policies that effectively prevented it (Reis & Westberg, 1994). Many schools have inconsistent policies about waiving course requirements for students who show mastery (Cognard, 1996). One study showed that only 42% of students who had completed accelerated coursework over the summer were placed in the next sequence of courses in the fall by their local schools (Olszewski-Kubilius, Laubscher, Wohl, & Grant, 1996).

Recently, the NAGC, the Institute for Research and Policy on Acceleration (IRPA), and the Council of State Directors of Programs for the Gifted (CSDPG) formed a National Work Group on Acceleration and recommended that

each school district have a written acceleration policy stating that: acceleration is an appropriate and effective intervention for select highly able students who have demonstrated high performance in one or more academic areas. The policy should be characterized by accessibility, equity, and openness. It should provide guidelines for the implementation of acceleration, including administrative matters, to ensure fair and systematic use of accelerative opportunities and recognition for participation in those accelerative opportunities. Finally, the policy should provide guidelines for preventing nonacademic barriers to the use of acceleration as an educational intervention and include features that prevent unintended consequences of acceleration. (Colangelo et al., 2010, p. 181)

These policy recommendations are timely because academic acceleration policy is presently set at the local level in most states ($n = 35$). Twenty-eight states have no state acceleration policy, and an additional seven explicitly allow local schools to set their own acceleration policies. Only eight states have policies specifically permitting academic acceleration. No states reported having a state policy prohibiting acceleration (National Association for Gifted Children, 2009).

Because much of the research regarding teacher attitudes and school policies occurred before the release of *A Nation Deceived* (Colangelo, Assouline, & Gross, 2004), the influence of the publication on educators' present attitudes about acceleration is unknown. One of the purposes of this study was to measure the attitudes of administrators and teachers toward acceleration 4 years after the release of *A Nation Deceived*. In addition, we wished to explore the reasons educators interested in gifted and talented students gave for supporting or not supporting acceleration. Finally, we wanted to explore how teachers rated the efficacy of various forms of acceleration.

Table 2. Demographic Information.

	<i>n</i>	%
Gender		
Male	17	11.2
Female	131	86.2
Years		
<5 years	20	13.7
Experience		
5-9 years	28	19.2
10-15 years	37	25.3
>15 years	61	41.8
Highest degree		
Bachelor's	44	28.9
Master's	96	63.2
Doctoral	8	5.3
Type of district		
Rural	24	15.8
Urban	77	50.7
Suburban	42	27.6
Position		
Classroom teacher	68	44.7
Administrator	18	11.8
Specialist	56	36.8
Total	152	

Note: Percentages do not total 100 due to missing demographic information.

Method and Data Source

Sample

We surveyed 152 educators attending a summer conference about gifted education. The conference was focused primarily on enrichment approaches and held at a university known more for an enrichment, rather than an acceleration, approach. Participants completed a paper and pencil survey at the end of the second day of the 5-day conference. Participation was voluntary, and all responses were anonymous. Thirty states were represented among respondents, and 11 respondents were from outside the United States. The median number of years of professional experience in education was 13 with a mean of 15.4 years. The most frequent reported grade taught was third grade. See Table 2 for further demographic details.

Instrumentation

The first step in instrument development was to conduct a focus group of teachers and researchers. The focus group listed reasons why educators might be hesitant to implement

acceleration. The reasons fell into categories around student needs (academic, social, emotional, and extracurricular), beliefs about acceleration (as outlined in *A Nation Deceived*), and logistical issues (funding, school policies, and teacher workload). Based on the focus group and previous research (Colangelo, Assouline, & Gross, 2004; Southern et al., 1989), we developed a 67-item survey. The survey was divided into four, unlabeled sections: concerns, beliefs, acceleration options, and demographic information. Within sections, items were in no particular order and were not grouped by subcategories.

The survey contained 31 statements (see Table 3) regarding concerns about accelerated students, 28 statements (see Table 4) on beliefs about acceleration, and 8 statements on different acceleration options (see Table 5). Participants were asked to respond to each item using a 7-point Likert-type scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *disagree somewhat*, 4 = *neither agree nor disagree*, 5 = *agree somewhat*, 6 = *agree*, and 7 = *strongly agree*). The concerns regarding acceleration were modeled after Southern et al. (1989) and included items related to academic, emotional, social, age, and extracurricular areas. Academic concerns focused on new content and access to academic experiences. Emotional concerns focused on self-esteem and emotional adjustment. Social concerns focused on peer relations. Age concerns included issues related to physical and emotional development. Extracurricular concerns involved students' access to leadership, drama, and sports beyond the regular school curriculum. The beliefs about acceleration section used the 12 myths from *A Nation Deceived* as a theoretical framework. We included additional items related to logistical issues with acceleration. Participants also rated the efficacy of eight forms of acceleration and responded to seven demographic questions.

Data Analysis Method

We expected the 31 concern statements to cluster into the following categories—emotional, social, academic, age, and extracurricular. However, common factor analysis with an oblimin rotation did not produce a meaningful factor structure. This could be due to our limited sample size, which did not meet the recommended $N:P$ ratio for factor analysis with this number of statements, or it could be the nature of the stems we used. Therefore, the results we are presenting are based on participant responses to individual statements on the surveys.

For the 31 concern statements, we computed means and frequencies for each item. Similar statistics were calculated for the beliefs section that focused around 12 common reasons for not accelerating students (Colangelo, Assouline, & Gross, 2004). In analyzing how teachers rated the effectiveness of eight types of acceleration, we compared the item means for teachers from urban, suburban, and rural districts to compare with previous research showing differences among these groups. We also used regression analysis to predict teachers' ratings of the effectiveness of grade-skipping by their beliefs about acceleration.

Table 3. Concerns About Students Who Are Accelerated (1 = *Strongly Disagree* and 7 = *Strongly Agree*).

Accelerated students	<i>M</i> ^a	<i>SD</i> ^a	% agree	% neutral	% disagree
Emotional concerns					
Have lower self-esteem	2.18	1.19	5	10	85
Are emotionally well adjusted	4.33	1.19	41	36	23
Are happy with their lives	4.93	1.2	58	33	9
Are arrogant	3.05	1.43	20	21	59
Social concerns					
Are not able to relate to their new classmates	2.56	1.44	16	9	75
Feel awkward	3.16	1.54	29	10	61
Have healthy relationships with their new classmates	4.87	1.3	64	22	14
Suffer socially	3.47	1.52	33	14	53
Are socially well-adjusted	4.35	1.29	45	27	28
Are lonelier than other students	3.34	1.38	21	27	52
Are put into situations that are not safe for them	2.57	1.27	10	19	71
Are resented by the other students in the class	3.82	1.49	43	17	40
Are unpopular	2.95	1.4	18	17	65
Academic concerns					
Overall end up with lower GPAs	2.25	1.23	4	16	80
Miss instruction on necessary study skills	2.41	1.28	11	11	78
Will not be able to handle the new content	2.04	0.88	1	8	91
Find it easy to master the new curriculum	4.46	1.35	46	30	24
Will be at a disadvantage when applying to college	1.95	1.12	2	9	89
Will have more college opportunities in the future	4.8	1.43	54	32	14
Are bored in their new class	2.6	1.26	9	17	74
Age concerns					
Are forced to grow up too fast	3.23	1.56	27	15	58
Miss important developmental stages	3.27	1.56	26	11	63
Suffer from physical limitations	2.8	1.37	14	18	68
Are as socially mature as their new classmates	3.8	1.48	31	26	43
Are not as socially mature as their new classmates	4.13	1.45	50	18	32
Extracurricular concerns					
Less likely to be involved in sports	3.39	1.45	26	24	50
Less likely to be involved in drama activities	2.75	1.29	5	34	61
Are less involved in leadership activities	2.52	1.21	5	20	75
Are able to participate in extracurricular activities	5.49	1.24	79	14	7
Are equally involved in activities outside of school	4.83	1.44	60	24	16

Note: GPA = grade point average.

^aBased on a 7-point scale.

Results

Concerns About Acceleration

Table 3 shows means and standard deviations, based on the 7-point scale, for the 31 concern statements, with percentages of respondents agreeing or disagreeing. For

Table 4. Beliefs About Acceleration (1 = *Strongly Disagree* and 7 = *Strongly Agree*).

	<i>M</i> ^a	<i>SD</i> ^a	% agree	% neutral	% disagree
Reason 1: Teachers lack familiarity with acceleration					
I am qualified to recognize students who are good candidates for acceleration	5.05	1.34	73	14	13
I would use acceleration if I knew more about it	4.86	1.57	58	28	14
Teachers are qualified to recognize students who are good candidates for acceleration	4.29	1.65	49	16	35
Reason 2: Confidence about acceleration isn't running high					
I am not confident acceleration works	2.75	1.67	16	13	71
Reason 3: Acceleration runs counter to personal beliefs					
I do not believe that acceleration is beneficial to students	2.17	1.5	10	7	83
I believe that acceleration is harmful to high-ability students	2.08	1.3	6	8	86
Reason 4: Age trumps everything else					
Age is the best way to find appropriate placement for students	2	1.13	4	5	91
Reason 5: Safe is better than sorry					
Accelerated students will have difficulty keeping up with the school curriculum in the future	2.26	1.15	5	10	85
Reason 6: Acceleration is not taught by Colleges of Education					
The effectiveness of acceleration is not supported by research	2.53	1.43	5	31	64
Acceleration study should be included in teachers' college course work	5.89	1.5	87	4	9
Reason 7: It's bad to push kids					
Accelerated students feel pressure to excel	4.72	1.58	65	14	21
Accelerated students have greater academic expectations put on them by teachers than students who are not accelerated	4.65	1.59	66	10	24
Accelerated students have greater academic expectations put on them by parents than students who are not accelerated	5.06	1.49	77	5	18
Reason 8: New friends are hard to make					
Accelerated students miss their old friends	4.18	1.48	52	20	28
Accelerated students can make friends easily	4.33	1.15	37	44	19
Accelerated students have difficulty making friends in the new class	3.3	1.42	25	20	55
Reason 9: Individual kids are less important than equal opportunities for all					
Acceleration is not fair to other students	1.83	1.01	2	6	92

(continued)

Table 4. (continued)

	<i>M</i> ^a	<i>SD</i> ^a	% agree	% neutral	% disagree
Acceleration lowers the school's standardized test scores	2.15	1.19	3	15	82
Reason 10: It will upset the other kids					
Accelerating one student will set a precedent for more students to be accelerated	4.61	1.75	63	13	24
Accelerated students are bullied	3.58	1.4	32	22	46
Reason 11: There will be gaps in a child's knowledge					
Accelerated students have "gaps" in their knowledge base	2.98	1.47	20	15	65
Reason 12: Disasters are memorable					
I have seen many successful students who have been accelerated	4.76	1.7	57	22	21
I have known a student who should have been accelerated	5.41	1.65	75	14	11
Logistical beliefs					
Parents are hesitant to support acceleration	3.49	1.55	30	17	53
Acceleration won't work in my school/school district	2.28	1.45	8	11	81
My school system does not support acceleration	3.53	1.94	34	14	52
Acceleration creates more work for the teacher	3.13	1.69	24	10	66
Acceleration creates too many logistical hassles to be effective	2.15	1.26	6	7	87

^aBased on a 7-point scale.

simplicity of discussion, we collapsed the 7-point Likert-type scale to groupings of *disagree* (ratings of 1 = *strongly disagree*, 2 = *disagree*, or 3 = *disagree somewhat*), *undecided* (4 = *neither agree nor disagree*), and *agree* (5 = *agree somewhat*, 6 = *agree*, or 7 = *strongly agree*). We have grouped the findings for specific items within the concern categories we originally proposed.

Academic Concerns. Most educators were not concerned with negative effects of acceleration on academic performance. A clear majority (80%) did not feel acceleration would harm students' GPAs. These educators were not worried that accelerated students would miss instruction in key study skills (78%). A large majority (91%) did not believe accelerated students would have difficulty with new content, although about one third (30%) were undecided about whether accelerated students would find it easy to master the new curriculum. Most educators (89%) disagreed that accelerated students would be at a disadvantage when applying to college, and 54% believed

Table 5. Rural, Suburban, and Urban Educators' Attitudes Toward Different Acceleration Strategies.

Type of acceleration	Rural		Suburban		Urban		Total		F	p
	M	SD	M	SD	M	SD	M	SD		
Early admission to kindergarten	4.33	2.22	4.36	2.27	4.54	2.18	4.40	2.22	0.102	0.903
Grade-skipping	5.25	1.62	4.95	1.88	4.90	1.83	4.99	1.81	0.312	0.732
Self-paced instruction	5.17	1.66	5.86	1.14	5.63	1.25	5.67	1.29	2.726	0.069
Subject-matter acceleration	6.00	1.50	6.32	0.93	6.44	0.74	6.30	1.00	1.480	0.231
Curriculum compacting	6.29	1.37	6.62	0.59	6.54	0.87	6.54	0.85	1.411	0.247
Credit by examination	5.88	1.43	6.05	1.10	5.85	1.06	5.96	1.14	0.487	0.616
AP	6.29	1.33	6.55	0.85	6.46	0.67	6.48	0.91	0.725	0.486
Concurrent/dual enrollment	6.17	1.37	6.40	0.88	6.22	0.99	6.31	1.00	0.735	0.482

AP = advanced placement.

accelerated students would have more college opportunities. Interestingly, the majority of teachers (74%) were also unconcerned that students would be bored in their new class.

Overall, these results indicate that teachers believed acceleration meets the academic needs of high-ability students, neither being insufficiently nor overly challenging. This corresponds to the literature indicating that accelerated students experience advanced academic achievement (e.g., Assouline et al., 2003; Brody et al., 1990; Burney, 2008; Colangelo, Assouline, & Gross, 2004; Espenshade et al., 2005; Kulik, 2004; Kulik & Kulik, 1992; McCluskey et al., 1996; Muratori et al., 2003; Olszewski-Kubilius, 1995; Saylor & Brookshire, 1993).

Emotional Concerns. The educators were mixed in their perceptions about self-esteem and emotional concerns on acceleration. The educators overwhelmingly (85%) disagreed that acceleration would lower students' self-esteem. However, about one third (36%) were undecided over whether accelerated students were emotionally well adjusted. A small minority (9%) did not believe accelerated students were happy with their lives (33% were undecided). Slightly over half of the teachers (58%) did not believe accelerated students were arrogant. These findings showed that some teachers were concerned about the emotional well-being of accelerated students, but it is unknown whether the emotional concerns about these students relate to their acceleration or if these are concerns of teachers for high-ability students in general. This is also indicative of the literature on acceleration that shows that the emotional benefits of acceleration are less pronounced than the academic benefits. Although grade-accelerated students generally outperform their chronologically older classmates academically, both groups show similar levels of social and emotional adjustment (Assouline et al., 2003; Colangelo, Assouline, & Gross, 2004; Kulik, 2004; Kulik & Kulik, 1992; Saylor & Brookshire, 1993; Southern & Jones, 1991).

Social Concerns. The teachers were similarly mixed in their perceptions of accelerated students' peer relations. Most educators (75%) did not feel that accelerated

students would have trouble relating to new classmates, and slightly over half (61%) were not concerned about accelerated students feeling awkward. Two thirds (64%) felt that accelerated students would have healthy relationships with their new classmates. Over half (53%) did not feel students would suffer socially from being accelerated. However, a slight majority (55%) was either undecided (27%) or disagreed (28%) that accelerated students were socially well adjusted. Slightly less than half (48%) were either undecided or believed accelerated students were lonelier than other students. Only a handful (10%) believed acceleration put students in unsafe situations. Interestingly, 43% of the respondents felt that other students in the class resented accelerated students, but only 18% believed accelerated students were unpopular. Thus, teachers appeared to be concerned with some aspects of an accelerated student's social experiences, but many also believed that the students would be able to develop healthy peer relationships. These mixed results also mimic the somewhat mixed research evidence on students' own perceptions of their social status (Gross, 1994; Hoogeveen et al., 2009; Richardson & Benbow, 1990; Saylor & Brookshire, 1993).

Age Concerns. Most educators in our sample also appeared to be less concerned with developmental and age-related issues. Over half did not believe students who were accelerated were forced to grow up too fast (58%) or missed important developmental stages (63%). Physical limitations, such as height or size differences, that might occur also did not appear to be a concern, as 68% of teachers disagreed that accelerated students suffer from physical limitations. Teachers were split as to their opinion about accelerated students' social maturity compared with their classmates, 31% agreed that they were as socially mature, while 50% felt that they were not as socially mature. It appears that age-related concerns were a factor for at least some of this population of teachers.

Extracurricular Concerns. Teachers also appeared to be less concerned about accelerated students' ability to participate in extracurricular activities. Only slightly over one fourth (26%) were concerned that accelerated students would be less likely to be involved in sports. Concern over being involved in drama was not an issue (5%). Over three quarters (79%) of the respondents felt accelerated students were able to participate in extracurricular activities, but most (60%) disagreed that accelerated students were equally involved in activities outside of school, although it is unclear if they thought students were more or less involved. Overall, from these results we can infer that these teachers felt that accelerated students had opportunities to participate in extracurricular activities, which is supported by the research concerning the extracurricular activities of accelerated students (Butcher, 2003; Colangelo, Assouline, & Gross, 2004; Noble & Drummond, 1992).

Beliefs About Acceleration

The items on a teacher's beliefs about acceleration were formulated around the 12 reasons that acceleration was not more accepted from *A Nation Deceived*, along with additional items addressing beliefs about logistical implications of acceleration (see Table 4).

Reason 1: Teachers Lack Familiarity With Acceleration. Three items addressed this reason. Over two thirds of teachers (73%) believed they were qualified to

recognize good candidates for acceleration, and only slightly more than one third (35%) did not believe that teachers were qualified to recognize good candidates. Slightly more than half of the teachers (58%) thought that having more information about acceleration would increase their likelihood of using it. Thus, while teachers felt they were qualified to recognize students for acceleration, they also indicated they would benefit from more information about it.

Reason 2: Confidence About Acceleration Isn't Running High. The item "I am not confident that acceleration works" addressed this reason. A large majority (71%) disagreed with this statement, indicating confidence in the efficacy of acceleration. This was not a reason these teachers held for not implementing acceleration.

Reason 3: Acceleration Runs Counter to Individual Beliefs. Two questions addressed the reason that acceleration runs counter to individual beliefs. A small minority of teachers (10%) believed acceleration was not beneficial for students. A large majority (86%) did not believe acceleration was harmful to high-ability students. Acceleration seemed to be a part of this sample's personal beliefs about effective educational options.

Reason 4: Age Trumps Everything Else. A large majority (91%) of teachers disagreed that age was the best way to place students appropriately. This shows that despite the emphasis age has in student placement within school systems, these teachers believed there were better ways of grouping students for instruction.

Reason 5: Safe is Better Than Sorry. One statement ("Accelerated students will have difficulty keeping up with the school curriculum in the future") addressed this reason. Only 4% of the teachers agreed with the item, indicating very limited concern about future academic difficulties caused by acceleration.

Reason 6: Acceleration is Not Taught by Colleges of Education. Although the survey did not directly address this statement, two items were designed to assess teachers' beliefs related to this reason. The majority of teachers (64%) believed that acceleration was supported by research, indicating an awareness of the present empirical support for acceleration. In addition, 87% believed that acceleration should be included in preservice teachers' coursework. It could be hypothesized that these teachers have benefited from instruction about acceleration, and hoped that this instruction was shared with more teachers.

Reason 7: It's Bad to Push Kids. The three items addressing this reason indicated whether teachers believed there was more pressure put upon accelerated students. Over half (65%) believed that accelerated students felt pressure to excel. The majority of teachers also believed teachers (66%) and parents (77%) put more pressure to excel on accelerated students than those who were not accelerated. These questions, however, did not address whether teachers felt this pressure was negative or positive.

Reason 8: New Friends Are Hard to Make. Teacher beliefs about making new friends were mixed. While over half (52%) believed accelerated students would miss their old friends, only about a quarter (25%) believed students would have difficulty making friends in a new class. Teachers were similarly split on whether accelerated students could make friends easily; close to half (44%) were undecided and only 37%

agreed with the item. These results suggest that teachers perceive that the ability to make friends is more dependent on students' personalities than on their accelerated status.

Reason 9: Individual Kids Are Less Important Than Equal Opportunity For All. The two items addressing this reason indicated that respondents did not believe equal opportunity for all was more important than individual opportunities. Overwhelmingly, teachers (92%) did not believe acceleration was unfair to other students. Also, in this age of accountability, 82% of teachers did not believe that acceleration lowered a school's test scores.

Reason 10: It Will Upset Other Kids. Two items addressed this reason. Nearly two thirds (63%) of teachers believed that accelerating a student would set a precedent for more students to be accelerated, although it was unclear if teachers believed this would be a positive or negative consequence of acceleration. On the other hand, teachers showed mixed opinions about whether accelerated students were bullied, with 22% being undecided. Only 42% of teachers believed that accelerated students were resented by other students in the class. Teachers in this study believed that acceleration of one student affected other students in the class, and although some believed that accelerated students were resented, few thought that they were bullied.

Reason 11: There Will be Gaps in a Child's Knowledge. The majority of teachers (65%) did not believe acceleration would cause gaps in a child's knowledge base. Teachers did not believe that this would be a reason not to support acceleration. In general, academic concerns were less held by teachers than social or emotional concerns.

Reason 12: Disasters Are Memorable. Surprisingly, teachers remembered students who were successful in acceleration, rather than focusing on negative experiences. The majority (57%) had seen many successful students who had been accelerated. Three quarters (75%) had known students who should have been accelerated. Although the survey did not include questions about negative experiences with acceleration, teachers did remember students who had been successful.

Logistical Problems

The five items addressing possible logistical problems with acceleration indicated that teachers were largely unconcerned with these issues. Just over half (53%) did not think parents were hesitant to support acceleration. Only 8% believed acceleration would not work in their school or district, while approximately one third (34%) believed that their school system did not support acceleration. Having administrative support is highly predictive of teachers' being willing to recommend students for acceleration (Rambo & McCoach, 2012). A large majority (87%) did not believe that acceleration created too many logistical hassles to be effective. Finally, close to two thirds (66%) of teachers did not believe that acceleration created more work for the teacher. It does not appear that teachers in this study viewed logistical problems as a reason to not accelerate students.

Acceleration Options

We asked participants to indicate how strongly they agreed to eight statements describing different acceleration options (see Table 5), using the same 7-point scale from 1 = *strongly disagree* to 7 = *strongly agree*. We wondered whether teachers in different settings would rate these options differently. Unlike Jones and Southern (1992), who found that rural school districts were less likely to use acceleration and expressed more negative perceptions about acceleration than urban school districts, we did not find any differences among rural, suburban, and urban educators with regard to their attitudes about any of the eight acceleration options we proposed.

While all the attitudes were positive (means greater than 4 = *neither agree nor disagree*), some strategies were more popular than others. Interestingly, the least popular strategies were those that are easiest to implement, but involve the greatest change in the students' environment (early admission to kindergarten and grade-skipping). The two most popular options (AP and curriculum compacting) provide services within students' existing environment but require more effort and expense than some of the other options. Curriculum compacting may have been popular because of the nature of the conference at which the data were collected. Curriculum compacting is often used to provide students with additional time to work on enrichment activities, and the conference where the data were collected strongly promoted enrichment learning.

Contributions to Acceptance of Grade-Skipping

Because grade-skipping is one of the most considered acceleration options, we were interested in what concerns were most related to acceptance of it. When we examined attitudes about grade-skipping with stepwise regression, we found five concerns accounted for 37% of the variance in attitude about grade-skipping (see Table 6). Respondents were most troubled by social issues, as reflected in three of the five predictors. The more an educator opposed grade-skipping, the more the educator felt grade-skipped students would suffer socially, would be unable to relate to new classmates, and would miss old friends. These educators were also concerned that grade-skipped students would not be able to handle the new content, and they felt accelerating students put them in unsafe situations. Although a limited number of participants were concerned about safety, these same participants were also concerned about grade-skipping. Recent research (Rambo & McCoach, 2012) indicated that teachers' objections to acceleration more strongly predicted their likelihood to recommend students for acceleration than their perceived academic benefits of acceleration.

Southern et al. (1989) found that teachers who had personal experience working with accelerated students demonstrated more positive attitudes toward grade-skipping. Using a simple correlation, we have similar findings in that teachers who indicated they knew students in need of acceleration were also positive about grade-skipping, $r(143) = .33, p < .001$. Unlike Townsend and Patrick (1993), we did not find a strong

Table 6. Predictors of Educators' Attitude About Grade-Skipping.

Model	Variables	B	SE	β	t	p
1	Constant	6.511	.284		22.902	<.001
	Are not able to relate to their new classmates	-.542	.097	-.457	-5.574	<.001
2	Constant	7.355	.370		19.894	<.001
	Are not able to relate to their new classmates	-.428	.099	-.360	-4.312	<.001
3	Suffer socially	-.338	.100	-.282	-3.378	.001
	Constant	7.864	.412		19.074	<.001
	Are not able to relate to their new classmates	-.311	.107	-.262	-2.906	.004
	Suffer socially	-.299	.099	-.249	-3.016	.003
4	Will not be able to handle the new content	-.466	.182	-.227	-2.562	.012
	Constant	7.778	.407		19.112	<.001
	Are not able to relate to their new classmates	-.360	.107	-.303	-3.350	.001
	Suffer socially	-.409	.109	-.341	-3.759	<.001
	Will not be able to handle the new content	-.570	.185	-.278	-3.088	.003
5	Are put into situations that are not safe for them	.313	.138	.222	2.264	.025
	Constant	8.307	.476		17.463	<.001
	Are not able to relate to their new classmates	-.350	.106	-.295	-3.302	.001
	Suffer socially	-.372	.109	-.311	-3.422	.001
	Will not be able to handle the new content	-.538	.183	-.262	-2.948	.004
	Are put into situations that are not safe for them	.350	.137	.248	2.544	.012
5	Miss their old friends	-.198	.096	-.166	-2.071	.041

relationship between the number of years our educators had taught and a positive attitude about grade-skipping, $r(144) = .09, p = .27$.

Educational Importance

It is encouraging that most of the reasons given for not accelerating students in *A Nation Deceived* were not supported by the sample in this study. Teachers in the field may have begun to accept the research that supports the use of acceleration for high-ability students. While our sample does not represent the larger teacher population, our results may indicate that, at least within the field, evidence supporting acceleration is influencing teachers' attitudes and beliefs.

While the majority of our sample was positive about acceleration, about one quarter consistently expressed some reservation about particular issues. This suggests that there is a fraction of the gifted community that still does not fully support acceleration practices for gifted and talented students, even after the release of *A Nation Deceived* (Colangelo, Assouline, & Gross, 2004).

The educators in our sample tended to support acceleration and to believe it could easily be implemented in their schools with minimal hassle. However, they believed others (i.e., parents and administrators) would not permit it. While our sample of administrators was small, they too tended to support acceleration, but believed others would not. Perhaps a reluctance to accelerate has less to do with individuals' perceptions about acceleration than their perceptions of what others believe. If this is the case, the key to changing acceleration practices may be to show administrators, who have the power to change acceleration policy in their schools, that many parents and teachers actually do support it.

The field of gifted education is often playing catch-up by spending resources reeducating administrators and classroom teachers about the needs of gifted students. Acceleration advocates need to take a proactive stance and seek to influence preservice teachers during their teaching preparation. While this should include information about the academic benefits of acceleration, greater emphasis should also be placed on positive student and parent attitudes about acceleration.

We were not surprised that curriculum compacting was the highest rated acceleration option. Compacting is often associated with enrichment programs, and the conference at which we collected these data featured several sessions on curriculum compacting. We were surprised that our sample rated AP, dual enrollment, and subject matter acceleration as equally favorable. These were not options covered in the conference at which the data were collected. Ironically, the least popular acceleration strategies (grade-skipping and early entrance to kindergarten) were also the easiest to implement but caused the greatest change in students' environments, while the most popular acceleration strategies (curriculum compacting, AP, dual enrollment, and subject matter acceleration) were the ones that required additional teacher time or school resources. Apparently, additional requirements on the part of teachers or additional school services/programs are less of a concern than placing younger students with older students. Although our educators indicated that they did not believe students should be placed for educational services by age, they still rated grade-based options lower—probably because of the social and emotional concerns the respondents also expressed.

While present research does not support the myth that acceleration is socially and emotionally harmful to gifted children, neither does it demonstrate overwhelming social benefits. As Cornell et al. (1991) noted 2 decades ago, additional research is still needed to determine which types of students socially benefit or do not benefit from acceleration under different acceleration options. Our work indicates that educators are already aware and accepting of the academic benefits of acceleration, and researchers should place more emphasis on investigating and documenting the social and emotional impact of acceleration on students. Researchers must do more to alleviate concerns on these issues if acceleration is to be universally accepted. Our data

indicate that educators are receptive to acceleration options. They believe they can identify students who would benefit from acceleration, see the benefits of accelerating students, and believe accelerating students will not be burdensome for them or their school. However, attitudes do not necessarily translate into behaviors. Continued research documenting the effectiveness of various acceleration options is still needed to transform positive attitudes into behaviors that support and promote acceleration for those students who will benefit from it.

Limitations

These results must be interpreted with caution. This is a small, convenience sample of educators interested in gifted education, as demonstrated by their attendance at a conference on the topic. Although they may have been more skeptical about acceleration than other educators of the gifted, given the nature of the institute they were attending, their views on acceleration are likely still more positive than those of general educators. Educators demonstrating interest in gifted education through their participation in a gifted conference have most likely had more exposure to the research supporting the use of acceleration. However, they still may be hesitant in implementing certain forms of acceleration, as seen in the results on the forms most popular among the sample. Another limitation to this study is that we did not collect information on what other types of professional development the participants had experienced. The small sample size also limits our findings; the results only reflect the attitudes of the teachers we surveyed.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Funding for this research was provided by an Institute for Research and Policy on Acceleration (IRPA) Grant through the Connie Belin and Jacqueline N. Blank International Center for Gifted Education and Talent Development.

References

- Archambault, F. X., Jr., Westberg, K. L., Brown, S. W., Hallmark, B. W., Emmons, C. L., & Zhang, W. (1993). *Regular classroom practices with gifted students: Results of a national survey of classroom teachers*. Storrs: The University of Connecticut.
- Assouline, S. G., Colangelo, N., Ihrig, D., Forstadt, L., Lipscomb, J., & Lupkowski-Shoplik, A. E. (2003, November). *The Iowa Acceleration Scale: Two validation studies*. Paper presented at the National Association for Gifted Children Convention, Indianapolis, IN.

- Bain, S. K., Bliss, S. L., Choate, S. M., & Brown, K. S. (2007). Serving children who are gifted: Perceptions of undergraduate planning to become teachers. *Journal for the Education of the Gifted, 30*, 450-478.
- Barnett, L. B., & Durden, W. G. (1993). Education patterns of academically talented youth. *Gifted Child Quarterly, 37*, 161-168.
- Benbow, C. P., Lubinski, D., Shea, D. L., & Eftekhari-Sanjani, H. (2000). Sex differences in mathematical reasoning ability at age 13: Their status 20 years later. *Psychological Science, 11*, 474-480.
- Bleske-Rechek, A., Lubinski, D., & Benbow, C. P. (2004). Meeting the educational needs of special populations: Advanced Placement's role in developing exceptional human capital. *Psychological Science, 11*, 474-480.
- Brewer, E. W., & Landers, J. M. (2005). A longitudinal study of the talent search program. *Journal of Career Development, 31*, 195-208.
- Brody, L. E., Assouline, S. G., & Stanley, J. C. (1990). Five years of early entrants: Predicting successful achievement in college. *Gifted Child Quarterly, 34*, 138-142.
- Brody, L. E., & Benbow, C. P. (1987). Accelerative strategies: How effective are they for the gifted? *Gifted Child Quarterly, 31*, 105-110.
- Burney, V. H. (2008, March). *School context and academic achievement in high ability adolescents*. Paper presented at the Annual Conference of the American Educational Research Association, New York, NY.
- Butcher, A. P. (2003). *Qualitative research study of high-achieving females' life experiences impacting success* (Unpublished doctoral dissertation). Aurora University, IL.
- Callahan, C., & Smith, R. M. (1990). Keller's personalized system of instruction in a junior high gifted program. *Roeper Review, 13*, 39-44.
- Caplan, S. M., Henderson, C. E., Henderson, J., & Fleming, D. L. (2002). Socioemotional factors contributing to adjustment among early-entrance college students. *Gifted Child Quarterly, 46*, 124-134.
- Chilton, C. M. (2001). *The math achievement, experiences, and attitudes of gifted and promising math students* (Unpublished doctoral dissertation). Arizona State University, Tempe.
- Cognard, A. M. (1996). *The case for weighting grades and waiving classes for gifted and talented high school students* (RM96226). Storrs, CT: National Research Center on the Gifted and Talented.
- Colangelo, N., Assouline, S. G., & Gross, M. U. M. (Eds.). (2004). *A nation deceived: How schools hold back America's brightest students*. Iowa City: University of Iowa.
- Colangelo, N., Assouline, S. G., & Lupkowski-Shoplik, A. E. (2004). Whole-grade acceleration. In N. Colangelo, S. G. Assouline, & M. U. M. Gross (Eds.), *A nation deceived: How schools hold back America's brightest students* (Vol. 2, pp. 77-86). Iowa City: University of Iowa.
- Colangelo, N., Assouline, S. G., Marron, M. A., Castellano, J. A., Clinkenbeard, P. R., Rogers, K., & Smith, D. (2010). Guidelines for developing an academic acceleration policy. *Journal of Advanced Academics, 21*, 180-203.
- Cornell, D. G. (1994). Young women who entered college early: A follow-up report. *College and University, 69*, 136-145.

- Cornell, D. G., Callahan, C. M., Bassin, L. E., & Ramsay, S. G. (1991). Affective development in accelerated students. In W. T. Southern & E. D. Jones (Eds.), *The academic acceleration of gifted children* (pp. 74-101). New York, NY: Teachers College Press.
- Davis, G. A., Rimm, S. B., & Siegle, D. (2011). *Education of the gifted and talented* (6th ed.). Boston, MA: Pearson.
- Espenshade, T. J., Hale, L. E., & Chung, C. V. (2005). The frog pond revisited: High school academic context, class rank, and elite college admission. *Sociology of Education*, 78, 269-293.
- Gagné, F., & Gagneir, N. (2004). The socio-affective and academic impact of early entrance to school. *Roeper Review*, 26, 128-138.
- Gross, M. U. M. (1992). The use of radical acceleration in cases of extreme intellectual precocity. *Gifted Child Quarterly*, 36, 91-99.
- Gross, M. U. M. (1994). Radical acceleration: Responding to the academic and social needs of extremely gifted adolescents. *Journal of Secondary Gifted Education*, 5, 27-34.
- Gross, M. U. M. (1999). Small poppies: Highly gifted children in the early years. *Roeper Review*, 21, 207-214.
- Gross, M. U. M. (2005). Radical acceleration and early entrance to college: A review of the research. *Gifted Child Quarterly*, 49, 154-171.
- Gross, M. U. M. (2006). Exceptionally gifted children: Long-term outcomes of academic acceleration and nonacceleration. *Journal for the Education of the Gifted*, 29, 404-429.
- Gross, M. U. M., & vanVliet, H. E. (2005). Radical acceleration and early entry to college: A review of the research. *Gifted Child Quarterly*, 49, 154-171.
- Harris, C. R. (1990). The Hollingworth longitudinal study: Follow-up, findings, and implications [Special Issue: Leta Stetter Hollingworth]. *Roeper Review*, 12, 216-222.
- Hobson, J. R. (1963). High school performance of underage pupils initially admitted to kindergarten on the basis of physical and psychological examinations. *Educational and Psychological Measurement*, 23, 159-170.
- Hoogeveen, L., van Hell, J. G., & Verhoeven, L. (2004). Teacher attitudes toward academic acceleration and accelerated students in the Netherlands. *Journal of the Education of the Gifted*, 29, 30-59.
- Hoogeveen, L., van Hell, J. G., & Verhoeven, L. (2009). Self-concept and social status of accelerated and nonaccelerated students in the first 2 years of secondary school in the Netherlands. *Gifted Child Quarterly*, 53, 50-67.
- Ingersoll, K. S., & Cornell, D. G. (1995). Social adjustment of female early college entrants in a residential school program. *Journal for the Education of the Gifted*, 19, 45-62.
- Janos, P. M. (1987). A fifty-year follow-up of Terman's youngest college students and IQ-matched atermates. *Gifted Child Quarterly*, 31, 55-58.
- Janos, P. M., & Robinson, N. M. (1985). The performance of students in a program of radical acceleration at the university level. *Gifted Child Quarterly*, 29, 175-179.
- Janos, P. M., Robinson, N. M., Carter, C., Chapel, A., Cufley, R., Curland, M., & Wise, A. (1988). A cross-sectional developmental study of the social relations of students who enter college early. *Gifted Child Quarterly*, 32, 210-215.
- Janos, P. M., Robinson, N. M., & Lunneborg, C. E. (1989). Markedly early entrance to college: A multi-year comparative study of academic performance and psychological adjustment. *Journal of Higher Education*, 60, 495-518.

- Jones, E. D., & Southern, W. T. (1992). Programming, grouping, and acceleration in rural school districts: A survey of attitudes and practices. *Gifted Child Quarterly, 32*, 112-117.
- Kolitch, E. R., & Brody, L. E. (1992). Mathematics acceleration of high talented students: An evaluation. *Gifted Child Quarterly, 32*, 78-86.
- Kulik, J. A. (2004). Meta-analytic studies of acceleration. In N. Colangelo, S. G. Assouline, & M. U. M. Gross (Eds.), *A nation deceived: How schools hold back American's brightest students: Vol. 2* (pp. 13-22). Iowa City: The University of Iowa.
- Kulik, J. A., & Kulik, C. C. (1992). Meta-analytic findings on grouping programs. *Gifted Child Quarterly, 36*, 73-77.
- Lubinski, D., & Benbow, C. P. (2006). Study of mathematically precocious youth after 35 years: Uncovering antecedents for the development of math-science expertise. *Perspectives on Psychological Science, 1*, 316-345.
- Lubinski, D., Webb, R. M., Morelock, M. J., & Benbow, C. P. (2001). Top 1 in 10,000: A 10-year follow-up of the profoundly gifted. *Journal of Applied Psychology, 86*, 718-729.
- Lupkowski, A. E., Whitmore, M., & Ramsey, A. (1992). The impact of early entrance to college on self-esteem: A preliminary study. *Gifted Child Quarterly, 36*, 87-90.
- Lupkowski-Shoplik, A. E., & Assouline, S. G. (1994). Evidence of extreme mathematical precocity: Case studies of talented youths. *Roeper Review, 16*, 144-151.
- Marsh, H. W. (1987). The big-fish-little-pond effect on academic self-concept. *Journal of Educational Psychology, 79*, 280-295.
- McCluskey, K. W., Baker, P. A., & Massey, K. J. (1996). A twenty-four year longitudinal look at early entrance to kindergarten. *Gifted and Talented International, 11*, 72-75.
- 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.
- McHugh, M. W. (2006). Governor's schools: Fostering the social and emotional well-being of gifted and talented students. *Journal for Secondary Gifted Education, 17*, 50-58.
- Muratori, M., Colangelo, N., & Assouline, S. (2003). Early-entrance students: Impressions of their first semester of college. *Gifted Child Quarterly, 47*, 219-238.
- National Association for Gifted Children, & Council of State Directors of Program for the Gifted. (2009). *State of the states in gifted education, 2008-2009, summary of findings*. Washington, DC: National Association for Gifted Children.
- Noble, K. D., Arndt, T., Nicholson, T., Sletten, T., & Zamora, A. (1999). Different strokes: Perceptions of social and emotional development among early college entrants. *Journal of Secondary Gifted Education, 10*, 77-84.
- Noble, K. D., & Childers, S. A. (2008). A passion for learning: The theory and practice of optimal match at the University of Washington. *Journal of Advanced Academics, 19*, 236-270.
- Noble, K. D., & Drummond, J. E. (1992). But what about prom? Students' perceptions of early college entrance. *Gifted Child Quarterly, 36*, 106-111.
- Noble, K. D., Robinson, N. M., & Gunderson, S. A. (1993). All rivers lead to the sea: A follow-up study of young adults. *Roeper Review, 15*, 124-129.
- Olszewski-Kubilius, P. (1995). A summary of research regarding early entrance to college. *Roeper Review, 18*, 121-126.
- Olszewski-Kubilius, P. (1998). Research evidence regarding the validity and effects of talent search educational programs. *Gifted Child Quarterly, 52*, 55-69.

- Olszewski-Kubilius, P., Laubscher, L., Wohl, V., & Grant, B. (1996). Issues and factors involved in credit and placement for accelerated summer coursework. *Journal of Secondary Gifted Education, 8*, 5-15.
- Plucker, J. A., & Taylor, J. W. V. (1998). Too much too soon? Non-radical advanced grade placement and the self-concept of gifted students. *Gifted Educational International, 12*, 121-135.
- Poelzer, G. H., & Feldhusen, J. F. (1996). An empirical study of the achievement of International Baccalaureate students in biology, chemistry, and physics—In Alberta. *Journal of Secondary Gifted Education, 8*, 28-40.
- Rambo, K. E., & McCoach, D. B. (2012). Teacher attitudes toward subject-specific acceleration: Instrument development and validation. *Journal for the Education of the Gifted, 35*, 129-152.
- Reis, S. M., & Westberg, K. L. (1994). An examination of current school district policies: Acceleration of secondary students. *Journal of Secondary Gifted Education, 5*, 7-18.
- Reis, S. M., Westberg, K. L., Kulikowich, J. M., & Purcell, J. H. (1998). Curriculum compacting and achievement test scores: What does the research say? *Gifted Child Quarterly, 42*, 123-129.
- Richardson, T. M., & Benbow, C. (1990). Long-term effects of acceleration on the social-emotional adjustment of mathematically precocious youths. *Journal of Educational Psychology, 82*, 464-470.
- Robinson, N. M. (2004). Effects of academic acceleration on the social-emotional status of gifted students. In N. Colangelo, S. G. Assouline, & M. U. M. Gross (Eds.), *A nation deceived: How schools hold back America's brightest students: Vol. 2* (pp. 59-67). Iowa City: University of Iowa.
- Robinson, N. M., & Janos, P. M. (1986). Psychological adjustment in a college-level program of marked academic acceleration. *Journal of Youth and Adolescence, 15*, 51-60.
- Rogers, K. B. (1992). A best-evidence synthesis of research on acceleration options for gifted students. In N. Colangelo, S. G. Assouline, & D. L. Ambrosio (Eds.), *Talent development: Proceedings of the 1991 Henry B. and Jocelyn Wallace national research symposium on talent development* (pp. 406-409). Waco, TX: Prufrock Press.
- Rogers, K. B. (2004). The academic effects of acceleration. In N. Colangelo, S. Assouline, & M. U. M. Gross (Eds.), *A nation deceived: How schools hold back American's brightest minds* (Vol. 2, pp. 47-57). Iowa City: The University of Iowa.
- Rogers, K. B., Young, M., & Lonergan, R. (2008, May). *A best-evidence synthesis of the research on academic acceleration: 1990-present*. Poster presented at the Ninth Biennial Wallace National Research Symposium on Talent Development, University of Iowa, Iowa City.
- Sankar-Deleew, N. (2002). Gifted preschoolers: Parent and teacher views on identification, early admission, and programming. *Roepers Review, 24*, 172-177.
- Saylor, 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.
- Sethna, B. N., Wickstrum, C. D., Boothe, D., & Stanley, J. C. (2001). The advanced academy of Georgia: Four years as a residential early-college entrance program. *Journal of Secondary Gifted Education, 13*, 11-22.

- Shaunessy, E., Suldo, S. M., Hardesty, R. B., & Shaffer, E. J. (2006). School functioning and psychological well-being of International Baccalaureate and general education students: A preliminary investigation. *Journal of Secondary Gifted Education, 17*, 76-82.
- Southern, W. T., & Jones, E. D. (1991). *The academic acceleration of gifted children*. New York, NY: Teachers College Press.
- Southern, W. T., & Jones, E. D. (2004). Types of acceleration: Dimensions and issues. In N. Colangelo, S. Assouline, & E. Gross (Eds.), *A nation deceived: How schools hold back America's brightest students* (pp. 5-12). Iowa City: University of Iowa.
- 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.
- Stanley, J. C. (1973). Accelerating the educational progress of intellectually gifted youths. *Educational Psychologist, 10*, 133-146.
- Stanley, J. C. (1985). How did six highly accelerated gifted students fare in graduate school? *Gifted Child Quarterly, 29*, 180.
- Stanley, J. C. (1988). Some characteristics of SMPY's 700-800 on SAT-M before age 13 group. *Gifted Child Quarterly, 32*, 205-209.
- Stanley, J. C., & McGill, A. M. (1986). More young entrants to college: How did they fare. *Gifted Child Quarterly, 30*, 70-73.
- Swiatek, M. A. (2002). A decade of longitudinal research on academic acceleration through the study of mathematically precocious youth. *Roeper Review, 24*, 141-145.
- Swiatek, M. A., & Benbow, C. P. (1991a). Ten-year longitudinal follow-up of ability-matched accelerated and unaccelerated gifted students. *Journal of Educational Psychology, 83*, 528-538.
- Swiatek, M. A., & Benbow, C. P. (1991b). A ten-year longitudinal follow-up of participants in a fast-paced mathematics course. *Journal for Research in Mathematics Education, 22*, 138-150.
- Swiatek, M. A., & Benbow, C. P. (1992). Nonintellectual correlates of satisfaction with acceleration: A longitudinal study. *Journal of Youth and Adolescence, 21*, 699-723.
- Taylor, M. L., & Porath, M. (2006). Reflections on the International Baccalaureate Programme: Graduates' perspectives. *Journal of Secondary Gifted Education, 18*, 21-30.
- Townsend, M. A., & Patrick, H. (1993). Academic and psychological apprehensions of teachers and teacher trainees toward the educational acceleration of gifted students. *New Zealand Journal of Educational Studies, 28*, 29-41.
- VanTassel-Baska, J. (1992). Educational decision making on acceleration and grouping. *Gifted Child Quarterly, 36*, 68-72.
- Wells, R., Lohman, D., & Marron, M. (2009). What factors are associated with grade acceleration? An analysis and comparison of two U.S. databases. *Journal of Advanced Academics, 20*, 248-273.
- Whitlock, M. S., & DuCette, J. P. (1992). Outstanding and average teachers of the gifted: A comparison study. *Gifted Child Quarterly, 33*, 15-21.
- Worrell, F. C., Szarko, J. E., & Gabelko, N. H. (2001). Multi-year persistence of nontraditional students in academic talent development programs. *Journal of Secondary Gifted Education, 12*, 80-89.

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