

Effects of Academic Acceleration on the Social and Emotional Lives of Gifted Students

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Abstract

Decades of research have provided evidence that acceleration has positive effects for gifted students both in the cognitive (academic) and affective (social and emotional) realms. The data on the affective are not as robust or straightforward as the findings for the cognitive realm; therefore, for many parents and educators the affective is the major concern regarding acceleration. The purpose of this chapter is to provide a review of the effects of acceleration on the “social and emotional lives” of gifted students. The authors provide a detailed and nuanced understanding of the generally positive effects of acceleration by indicating how the type of acceleration can impact the social and emotional development of students. In addition, gender, ethnicity and developmental level can have a differential impact. The authors provide information on research limitations in terms of samples and research design. Despite the limitations, they conclude that there is enough research evidence to guide our understanding about the general effects of acceleration including a more differentiated and qualified understanding of its impact on the social and emotional lives of gifted students.

INTRODUCTION

Dr. Nancy Robinson, eminent scholar from the University of Washington, contributed a thoughtful chapter, “Effects of Academic Acceleration on the Social-Emotional Status of Gifted Students” (Robinson, 2004) to *A Nation Deceived: How Schools Hold Back America’s Brightest Students*. Dr. Robinson’s chapter created a solid foundation for the current chapter; however, the authors frame the topic slightly differently with a focus on the social and emotional lives of gifted students. The change, while subtle, actually opened up additional perspectives on the topic. Social and emotional lives are defined as a category that includes all aspects of the psychology of human experience from traditional social and emotional indicators to phenomenology to personality. For example, Rogers (2010) used three distinct categories of effects in her meta-analysis of the literature on acceleration: academic, social adjustment, and psychological adjustment. In this chapter, by using the heading of “social and emotional lives of gifted students,” we shed light on the social and psychological adjustment effects of acceleration, which is more comprehensive than traditional emphases on social and emotional indicators alone.

CONSIDERATIONS BEFORE EXAMINING THE RESEARCH

To organize the research base on the topic, it was necessary to consider the fact that there are numerous types of acceleration practices (Southern & Jones, 2004). Similar types of acceleration may affect students in multiple developmental stages. For example, early entrance to preschool or kindergarten versus early entrance to college impacts students 10 to 12 years apart in age. There are myriad factors and variables applicable in sorting out the potential impact of acceleration on the social and emotional lives of gifted children. For example, one could consider naturally occurring characteristics of gifted students such as asynchronous development (Silverman, 1997) and view them in light of differing acceleration techniques such as subject-area acceleration, grade-skipping, radical acceleration, and so on.

In addition to considering the interaction of varied student characteristics and types of acceleration, experience is another applicable variable. In some studies, the gifted students had considerable experience among students with

similar abilities in a selected setting, and in other studies this was not the case. Another issue is related to the variability in the ways in which acceleration may affect students across cultural groups, including both those that encourage individual achievement and those that encourage community-based group performance, such as students from Native American backgrounds. The challenge in organizing the information for this chapter was representing the research base in an organized manner that addresses as many of the permutations as reasonable and to illustrate where more research is needed.

Results from meta-analyses, which examine a large number of studies (see Rogers, 1992; 2010; this volume) on the various subtopics of acceleration, elicit confidence about the intervention. Moreover, the growing corpus of qualitative studies is slowly building from compelling specific examples, where in students who experience acceleration opportunities seem to benefit from them psychologically.

The research conducted on acceleration over the past 40 years has uncovered new factors and variables and raised important issues about the interpretation of data collected. For example, the role of context in influencing the findings; the relative developmental ages of the students being studied; students' previous experiences with nongraded or home-schooled environments; the changing referent group and how to interpret it appropriately across settings (e.g., the Big-Fish-Little-Pond Effect; Dai & Rinn, 2008; Marsh & Craven, 2002); the limitations of the instruments used to study acceleration; and the need to parse out nonaccelerative effects from the findings within specific studies.

The most obvious lesson learned from a perusal of research from the past 40 years has been that the findings have reflected samples largely absent of diversity (McCain, 2012). This phenomenon is particularly problematic due to the fact that many of the studies rely on convenience samples from programs run by universities and/or schools. Ultimately, the findings of the research in this area are treated as a "yes" or "no" phenomenon, when it is time to provide responses that are more specific to the condition and samples used. The research focusing on some groups, and/or permutations of factors and variables, leave researchers unable to fully address the question about the nature and degree of effects of acceleration on the social and emotional lives of gifted students.

The field of gifted education is becoming increasingly nuanced in its research into matters of a psychological nature, but we still use the terms social and emotional as a repository rather than as two categories under the broader heading of psychological changes, effects, influences, and so forth. Consequently, the authors chose the descriptive term "social

and emotional lives" to represent the larger, more expansive framework, which includes both social and psychological adjustment, to better understand the many ways acceleration affects gifted students. This broader framework can include traditional topics such as self-concept, but also allows for other topics to be included such as resilience, lived experience, social coping, and impression management, while also allowing for increasingly nuanced and culturally specific topics that are more contemporary to the literature.

THE RESEARCH BASE

EFFECTS ACROSS ACCELERATION STRATEGIES

Acceleration strategies are based on an assumption that a standard curriculum, as delivered in heterogeneous classroom settings, is insufficient to address gifted students' diverse needs. The complex cognitive, personal, and social characteristics of gifted students suggest that provision of different accelerative options should be carefully designed in a way that will build personal and social competencies. Although numerous acceleration strategies are available and studies continue to show positive outcomes as well as a lack of negative outcomes on social-emotional development for any form of acceleration (see Rogers, 2010; this volume), the best acceleration option should be chosen and tailored to the academic and social-emotional strengths of the individual child. Some of the acceleration strategies demand changes in the school curriculum (e.g., subject acceleration), whereas other strategies focus on student placement in more advanced levels of the existing curriculum (e.g., grade-skipping); the saliency of the social-emotional impact varies according to the strategy.

Early entrance to school. Analyses of now-classic studies (Hobson, 1963; Worchester, 1956) on early admission to kindergarten or first grade report positive results on social and emotional outcomes. These studies revealed that younger students had more positive or better social and emotional adjustment than their older classmates (Daurio, 1979; Eisenberg & George, 1979; Worchester, 1956) and were actively engaging in extracurricular activities and occupying school positions of leadership (Hobson, 1963). Rogers's (2010) meta-analysis that included studies of early entrance revealed positive academic and social adjustment, but negative psychological adjustment effect sizes (.30, .10, and -.24 respectively). Gagné and Gagnier (2004) investigated teachers' perceptions of the social-emotional and academic effects of early entrance to school. Kindergarten and second grade teachers from 18 school districts in the Canadian Province of Quebec

evaluated the five best-adjusted and least-adjusted students within their classes on conduct, integration, maturity, and academic achievement. The group of students included 98 early entrants and 1,723 regular entrants. Early entrants were rated higher than regular entrants and, as a group, showed no evidence of greater risk for adjustment problems. However, sex differences in the adjustment of early entrants were identified, favoring girls. Robinson (2004) recommended that early entrance to kindergarten should be limited to children who were not younger than the cut-off birth date by more than three months.

Grouping. Grouping students by ability (homogeneous grouping) allows them to work at a pace of learning that often exceeds the school's typical curriculum. There is a long-standing controversy regarding the effectiveness of homogenous versus heterogeneous grouping on gifted students' academic and social-emotional lives (Benbow & Stanley, 1996; Feldhusen & Moon, 1992; Kulik & Kulik, 1997; Oakes, 1990, 1992; Rogers, 1991; Slavin, 1990). Although some scholars advocate heterogeneous grouping (Oakes, 1990, 1992; Slavin, 1990), research suggests that this type of grouping has negative impacts on gifted students' social and emotional lives. Boredom and demotivation due to the lack of challenge (Baker, Bridger, & Evans, 1998), social ostracism (Gross, 1989), being misunderstood (Kulik & Kulik, 1987), and teasing and bullying by peers (Moon, Nelson, & Piercy, 1993) are among the negative impacts. Many researchers in the field of gifted education believe that gifted students benefit from homogenous grouping both academically and socioemotionally (Adams-Byers, Whitsell, & Moon, 2004; Feldhusen & Moon, 1992; Kulik & Kulik, 1997; Rogers, 1991; Saylor & Brookshire, 1993).

Special classes. Special classes provide a range of opportunities for high-ability students with an intense and focused interest to master challenging materials in various content areas. Several studies included affective variables to investigate the social and emotional outcomes of the special classes. Moon, Swift, and Shallenberger (2002) examined gifted fourth and fifth graders' perceptions of a self-contained class. Qualitative and quantitative analyses of the data suggested that the self-contained classroom provided a challenging learning environment for gifted students, but there were different social and emotional outcomes for specific students during the school year. Specific emotional benefits that students listed in their focus groups were feeling smarter and happier and feelings of accomplishment, pride, and achievement. Parents of the students reported increased happiness and self-esteem and improved self-discipline as part of the emotional benefits of participation in the self-contained class. Students indicated that they were also experiencing

some emotional challenges such as feeling "regular" because of no longer being at the top of the class, being embarrassed by poor grades, and feeling pressured, stressed, confused, or some combination of these emotions. Unhappiness and stress were emotional concerns that parents thought their children experienced during the program. The social concerns reported by the students included being "new" to a group, missing old friends, losing old friends, and being teased or insulted by students outside the class. Teachers and administrators noted that the program was effective in helping the students to develop social skills.

Wright and Leroux (1997) studied 25 gifted adolescents' self-image during the transition year in a grouped classroom in secondary school. The researchers employed the *Harter Self-Perception Profile for Adolescents* (Harter, 1988) and an interview technique. The findings revealed that the self-image of the students increased significantly in the subscales Romantic Appeal and Close Friendship. The qualitative data suggested that gifted students enjoyed being within a gifted group. Overall, there was no change in Global Self-Worth scores: The gain in female scores was offset by a decrease in male scores. This finding suggested that females had a more consistently positive response to the social atmosphere created in the grouped setting than males. The students were conscious of being labeled as different. Students' Social Acceptance scores remained below the scores of Harter's norming group. This implies that, although grouping was related to statistically significant improvements in students' self-perceptions, in some areas these improvements did not bring students self-perceptions to the level of typical students.

Single-subject acceleration. High-ability students who are served in regular classrooms spend a good deal of their time in practicing already mastered skills, working on unchallenging tasks, and reviewing content for which they already show substantial proficiency and/or mastery. Single-subject acceleration allows students to move more rapidly through the content with specific modifications in curriculum. The student may be placed in a classroom one or more years ahead of his or her actual grade level, or be asked to stay in his or her own classroom to work independently through the advanced curriculum. These two options might have different outcomes socially and emotionally. However, the research on the effects of this acceleration strategy on the social and emotional lives of gifted students is far more limited than that on academic outcomes. Lee, Olszewski-Kubilius, and Thomson (2012) investigated students' perceptions of their social competence in gifted programs of different types. They found more positive effects for subject acceleration on social competence over whole-grade acceleration. Students who had

experienced subject acceleration were found to have higher interpersonal ability scores than other students.

Grade-skipping. Rogers (2010) found an average effect size of .34 across four studies for social adjustment effects and an average effect size of .42 across three studies for psychological adjustment effects of grade-skipping. These effect sizes are small to medium-sized positive effects. On the other hand, in an analysis of the literature, Neihart (2007) concluded that there were no substantial positive or negative social or psychological adjustment effects for grade-skipping. Assouline, Marron, and Colangelo (2014) described the overall effects of grade-skipping as positive. In general, the effects of grade-skipping appear to be positive and larger than for most other accelerative strategies, given the overall effect sizes found by Rogers (2010; this volume) and Steenbergen-Hu and Moon (2011).

Gross (2006) provided an update of the findings from a 22-year longitudinal study of students with IQs greater than 160. She compared students who were accelerated to those who were not accelerated. Her findings indicated that students who were accelerated two or more years in early elementary school had far greater social self-esteem in childhood and better social relationships later in life. She found that students who were denied accelerative opportunities experienced social problems throughout their academic careers and attributed this to early negative social experiences that prevented these students from learning social skills. Gross's conclusion creates an urgency in terms of accelerative decisions for highly gifted students because delays in the provision of accelerative options could have long-lasting effects on social adjustment.

Summer programs. Special classes that are not a part of the regular school program tend to be extracurricular, accelerative offerings during summer sessions or weekends throughout the academic year. The contributions of summer programs to gifted students' social and emotional lives are documented by a large number of studies (Barnette, 1989; Brookby, 2004; Cunningham & Rinn, 2007; Kolloff & Moore, 1989; Parker, 1998; Rinn, 2006). Analyses of these studies revealed increases on social and emotional measures as a result of participating in a summer program. Kolloff and Moore examined the self-concepts of gifted students in Grades 5–10 in three summer residential programs. Self-concepts of students in all grade levels and programs were significantly higher at the end of the programs. In the program evaluation of the Torrance Creative Scholars Program, a two-week summer program for students completing grades four through eight, Parker (1998) found that 66% of the respondents reported increases in

self-concept. Parents of the participants reported increases in self-esteem, independence, maturity, and responsibility among their children. Similarly, Barnette (1989) studied 54 gifted adolescents' self-esteem and cohesion in a three-week nonresidential summer program; the results of the study revealed positive changes on both measures.

Studies that were conducted in recent years reported similar findings. Brookby (2004) found a significant increase in mathematically gifted high school students' social self-concepts as a result of participating in a summer residential program. Rinn (2006) examined the effects of a three-week summer residential program on two aspects of peer relations self-concepts of gifted students. Both same-sex and opposite-sex peer relation self-concepts increased over the course of the program based on subscale scores on the *Self-Description Questionnaire II* (Marsh, 1990). Cunningham and Rinn (2007) conducted a similar study examining academic, general, and emotional stability self-concepts, and found very small increases in general and emotional stability self-concepts over the course of the program. However, prior participants in the program had lower initial values of general self-concept than students who were first-time participants. This may indicate a more realistic appraisal of self-concept after exposure to other students who are equally able.

Early college options. There are several types of early college options available to students (e.g., residential academies with their own advanced curricula, residential academies offering early entrance to college, and early college high school). Overall, the effect of early college is positive, and provides development and growth opportunities for students. According to Neihart (2007), when appropriate selection criteria are applied, early college students do very well socially and emotionally. Rogers (2010) found an average mean effect size of .20 for six social adjustment studies and .29 for nine psychological adjustment studies, while Steenbergen-Hu and Moon (2011) found an overall effect size of .21 for eight studies. In other words, the effect of early college on social and emotional development is small and positive.

Early college high school. The majority of contemporary studies of the psychological or social adjustment effects of early college involve students at residential academies (e.g. Boazman & Sayler, 2011; Cross & Swiatek, 2009; Heilbronner, Connell, Dobyns, & Reis, 2010; Rollins & Cross, 2014a, 2014b); however, a recent study included the Early College High School model (McDonald & Farrell, 2012), a nonresidential program in which students attend community college. Early college high school (ECHS) is a dual enrollment program in which students take high school classes concur-

rently with community college classes, but unlike residential academies, students live at home. An increasingly more common option that is not limited to gifted students is called dual credit (DC). In DC programs, high school students can take a limited number of college-credit-bearing classes, often in their own schools. This option is not reported on in this chapter because it is not unique to gifted students and because the curriculum of the courses does not tend to be as rigorous as the other options, such as Advanced Placement courses or accelerated courses.

ECHS is an option that has been studied in populations of disadvantaged students. McDonald and Farrell (2012) conducted focus group interviews of 31 disadvantaged students (29% low-SES; 45% first-generation college students; 10 Hispanic; one African American) who ranged in age from 13 to 16 years old and were enrolled in an ECHS program in which they attended classes at a local community college. The participants described how the transition to a context where a scholarly identity was accepted freed them from the stress of impression management and allowed them to develop their personal academic identities. Evidence was found of unique struggles faced by underrepresented students. This group of students displayed a greater capacity for self-regulation and delayed gratification than age peers.

In another ECHS study, McCain (2012) investigated the academic identity development of eight high-achieving African American students who were enrolled in an early college program at a historically Black high school. This group of students demonstrated a strong sense of academic identity that they attributed to several factors. First, family influences were a motivating force for these students, although these forces had different forms. Some students were motivated to sustain a family history of high achievement, while others were motivated to not repeat the mistakes of their parents. Second, the students exhibited a higher level of maturity in their decisions regarding social interactions; they described selecting peers who would not interfere with achievement. The group prioritized academics over peer interactions, demonstrating greater maturity than age peers. Third, evidence was found of students' support for stereotypical views of "acting Black," and the students rationalized why they did not mirror the stereotype. Acting Black is generally understood as behaving in a manner consistent with the stereotypical values of African American communities. Students attributed not "acting Black" to coming from a two-parent home, living in the suburbs, and having a church life; the high-achieving students had a clear disdain for those who "acted Black." However, McCain posited that attending a historically Black school allowed the high-achieving students to have strong academic

identities without "acting White." Acting White is generally understood as a pejorative descriptor of African American students behaving in a manner stereotypically believed to represent the white or Caucasian community's values.

Taken together, these studies imply that self-regulation is a critical skill to students who access college coursework while still in high school. These studies are among the few that include African American and Hispanic students, who are notably absent from most other studies of gifted students. The finding that self-regulation is important to underrepresented students' success is similar to research with nondiverse samples; however, the lack of peer acceptance of students' scholarly identities before entering early college may be more acute for students belonging to underrepresented groups. The students' views about "acting Black" raise questions about the effects of the identity dissonance between racial and academic identities on students psychologically. More research is needed in this area. However, similar to nondiverse students, these students felt the need to be selective in their social interactions to ensure academic success.

Residential academies. Residential academy (RA) students typically substitute the academy curriculum for their last two years of high school, although some may be accelerated by up to four years. In one RA model, students obtain an associate's degree and their high school diploma at the same time. In the other form of RA, students take college classes, Advanced Placement (AP) courses, and so forth. In both cases, the curriculum is accelerated compared to the students' traditional high schools. These students have the experience of leaving home for college earlier and entering a situation in which the mean ability level of their peers is much higher. Several studies have examined the effect of this combination of experiences in terms of students' psychological and social adjustment and are discussed in the following section.

Cross-sectional studies. Heilbrunner, et al. (2010) examined students' reasons for leaving an early college program and compared the perceptions of students who completed the program (completers) and those who left the program (leavers). They found that many students who left the early college program did so for reasons that were categorized as *positive attrition*. In other words, these students left the program to seek improved fit in a different program and not for social-emotional reasons. A small number (2 of 13 leavers) did so for primarily social-emotional reasons. The vast majority of the 44 students in the study viewed their program participation as a positive experi-

ence that helped them to develop and prepare for future college experiences. Boazman and Saylor (2011) compared correlates of personal well-being for 174 students who had been enrolled in a residential academy to a norming sample. They found that the academy students had much higher life satisfaction in terms of personal safety and future security. Smaller positive effects were observed for satisfaction with life achievement and overall life satisfaction, whereas a small negative effect was observed for satisfaction with personal relationships. Larger scores in global self-efficacy and seriousness were observed in the academy group.

Longitudinal studies. Cross and Swiatek (2009) examined the social coping of students at a residential academy. Major findings included that, over time, students became more likely to see themselves as accepted by their peers and to deny giftedness, and became less likely to engage in high levels of social interaction. Rollins and Cross (2014a, 2014b) measured psychological stress of students at a residential academy five times over the course of an academic year. The analyses showed that students were quite resilient and adopted successful coping strategies to deal with the stress of increased academic challenge and attending a residential academy. Both studies support the conclusion that gifted students experience positive development when they are engaged in an academic context that is better matched to their abilities.

Effects across cultural groups. Few studies have included substantial numbers of racially or ethnically diverse students; however, more recently a few studies have focused on underrepresented populations (e.g., Lee, Olszewski-Kubilius, & Peternel, 2010; McCain, 2012; McDonald & Farrell, 2012). The vast majority of extant research describes only Asian and White students, leaving many unanswered questions about the effect of acceleration on the psychological and social adjustment of underrepresented students. The studies with diverse student samples will be summarized in this section.

Project EXCITE. Lee et al. (2010) conducted a qualitative study of 30 students in grades four through nine who were Project EXCITE participants. Project EXCITE is an enrichment program for elementary students that begins in third grade. Of the 30 students, 17 had experienced one to two years of subject acceleration in mathematics and 13 had not. Of the 17 accelerants, 12 were successful and had earned A's or B's, whereas five were not successful and earned grades of C

or lower. Positive effects for the accelerants included reduced boredom, increased interest in math, increased motivation, higher confidence, and stronger identity as a “smart student.” As far as social effects, fewer than half of the accelerants had made new friends in their advanced classes. The majority of the students did not perceive negative peer pressure concerning academics. The students exhibited high levels of self-regulation and were able to prioritize academics above socialization. Lee et al. found that the teachers believed that negative peer pressure would be more of an issue than the students' responses implied. Through semistructured interviews they found that students (a) had enhanced motivation and confidence, (b) tended to not socialize with new classmates in the advanced classes and instead preferred to socialize with “regular” friends, (c) did not perceive negative peer pressure towards academics or peer competition, (d) had increased academic confidence, (e) felt their personal intelligence was affirmed - they “felt smart,” and (f) perceived dual stigmatization—being a racial minority and gifted. These findings imply that students' feelings about their own readiness may be an important placement consideration. Teachers believed negative peer pressure existed, but there was little evidence for negative peer pressure found in this qualitative study.

Early college high school. Two studies represented the effect of early college high schools on underrepresented students and were discussed in the previous section on Early College High School (McCain, 2012; McDonald & Farrell, 2012). Similar to the Project EXCITE study, issues of academic identity and self-regulation were identified as important.

Issues associated with underrepresented students. Researchers (McCain, 2012; McDonald & Farrell, 2012) concluded that there may be greater positive psychological and social adjustment effects for underrepresented and first-generation students when they are accelerated. Further, McDonald and Farrell's findings imply that, without accelerative opportunities and left in the traditional comprehensive high school environment, gifted students may stay in hiding due to their unwillingness to be exposed as gifted. As observed by Lee et al. (2010), students feel twice stigmatized due to their giftedness and their culture. The Information Management Model (Cross & Coleman, 2005) describes how gifted students may respond to feelings of stigma and differentness from age peers. Some students respond by disidentifying with academics or finding ways to fit in with their age peers through other means, such as focusing on athletics. From the standpoint of the Information Management Model (Cross & Coleman, 2005), the combined pressure of cultural and social norms may create more acute impression management issues for these students. It is likely that the degree of difficulty

depends on the school context in terms of racial and ethnic diversity and SES profile. However, limited evidence currently exists in the literature. As McCain (2012) noted, if Black students are the majority at a school, this may reduce concerns of Black students appearing to “act White.” No specific evidence concerning other underrepresented groups was located. Furthermore, a larger proportion of racial and ethnic minority students are also members of lower SES groups, and these social class differences can contribute negatively to impression management. More research is needed with regard to within- and across-group differences in the psychological and social adjustment effects of acceleration.

PSYCHOLOGICAL ADJUSTMENT

Psychological adjustment refers to students’ feelings about themselves and measures of personal traits that affect well-being. Results from numerous studies and meta-analyses (e.g., Goldring, 1990; Kulik & Kulik, 1991; Rogers, 2004, 2010; Steenbergen-Hu & Moon, 2011), lead to the conclusion that the effect of acceleration on psychological adjustment is, in the worst case, not negative and, at best, is small and positive. In her review of 49 studies that reported 149 psychological outcomes, Rogers’s (2010; this volume) analysis yielded a clustered average effect size of +.20, a small positive effect. Steenbergen-Hu and Moon reviewed 23 studies that reported 133 effect sizes, combining psychological and social adjustment effects in their analyses. They did not find a statistically significant social-emotional effect for acceleration. Neihart (2007) reached a similar conclusion—that there were no harmful effects associated with acceleration, but no advantages either. Studies have reported benefits such as positive self-esteem and higher educational aspirations (see Neihart, 2007 for a review). The effects varied somewhat across accelerative strategies (as described above). Studies pertaining to two important areas of psychological adjustment—self-concept and resilience—are described below.

Self-concept. Studies have assessed the effect of accelerative strategies on various domains of self-concept (Brookby, 2004; Coleman & Fults, 1982; Cunningham & Rinn, 2007; Lee et al., 2012; Karnes & Wherry, 1981; Kolloff & Moore, 1989; Maddux, Scheicher, & Bass, 1982; McQuilkin, 1981; Manor-Bullock, 1994; Parker, 1998; Preckel, Götz, & Frenzel, 2010; Rinn, 2006; Wright & Leroux, 1997). In general, participation in residential summer programs was associated with small gains in academic self-concept; however, students who attended full-time residential academies experienced a decrease in academic self-concept. An explanation for this difference may be that the short duration of summer programs

does not cause the student to change the referent group for comparison, thus academic self-concept does not decrease as it does for students who are surrounded by equal- or higher ability peers in a new school and are no longer the “big fish.” Similarly, Cunningham and Rinn (2007) noted that students who had prior experiences in summer residential programs had initially lower academic self-concepts than the first-time participants, but both groups had gains in academic self-concept over the course of the program. This observation of a drop in academic self-concept is supported by the theory that self-concept is adjusted when the student joins a new referent group that includes more similar ability peers and evidence of this effect (e.g., Marsh & Hau, 2003). However, it is important to note that, although a drop in academic self-concept has been observed in these situations, generally the levels of academic self-concept remain higher than average. Thus, the drop in academic self-concept likely reflects a more realistic self-appraisal and should not be of concern for most students. However, 12 of 44 students surveyed by Adams-Byers et al. (2004) cited reduced self-esteem and class rank as a social-emotional disadvantage of homogenous grouping, indicating this is a concern for some students. Rollins and Cross’s (2014a) longitudinal study of gifted students at a residential academy explored how students adjusted and reframed such comparisons to avoid negative effects. If a student’s identity is largely defined by his or her relative academic ranking, counseling should be provided to help the student gain perspective on this issue.

Aspects of self-concept other than academic self-concept have been studied and, generally, accelerants scored higher than other students. For example, Lee et al. (2012) surveyed past participants of summer residential programs and found that the participants had higher levels of global self-worth and much higher levels of scholastic self-competence than a norming sample. Many, but not all, aspects of self-concept increased over the course of short-term gifted programs. Cunningham and Rinn (2007) found very small increases in general and emotional stability self-concepts, and Rinn (2006) found increases in same-sex and opposite-sex peer relations over the course of summer residential programs. However, Little, Kearney, & Britner (2010) found no difference in gifted students’ self-concepts after participation in a summer mentoring program, except for an increase in job competence. Overall, accelerants generally had higher self-concepts than non-accelerants and short programs tended to have positive effects on the self-concepts and peer relations of participants. Long-term homogeneous grouping of gifted students caused reduced self-concept, but most students adjusted and avoided negative effects.

Resilience. Rollins and Cross's (2014a) assessments of psychological adjustment in gifted students at a residential high school academy provide evidence of the resilience of gifted students. Psychological distress was measured five times over the course of an academic year using the Youth Outcome Questionnaire (YOQ; Burlingame, Wells, & Lambert, 2004). Their analyses revealed that the students who perceived the greatest initial increase in stress also experienced the most rapid reductions in stress over time. One limitation of this study was that 41 out of 170 students who did not graduate were not evaluated for psychological distress. Although students experienced moderate increases in anxiety, fearfulness, and depression upon transitioning to the new environment, they were resilient and able to develop coping mechanisms or adapt. Through interviews, Rollins and Cross (2014a) found that students modified how they thought, felt, or behaved to reduce stress and maintain achievement; this is evidence of enhanced social maturity (Neihart, 2007). Notably, students described social interactions as a lower priority than academic performance. Although many students perceived the school to be a negative experience in terms of the increased demands and personal constraints, the experience had utility value because it encouraged changes that better prepared them for college. The students were cognizant of the positive changes that had occurred within themselves during the experience. Rollins and Cross (2014a) described the students' responses as characteristic of thriving in a challenging context.

SOCIAL ADJUSTMENT

Social adjustment refers to social interactions and their effect on the student. Similar to what has been found for psychological adjustment, the overall effect of acceleration on social adjustment appears to be in the range of not harmful to small and positive. These conclusions are very similar to those made by Robinson (2004). Far fewer studies have been conducted regarding social adjustment than for psychological adjustment, which refers to personal traits that affect well-being and self-perceptions. This is likely due to the greater challenge of operationalizing or measuring social adjustment. In her best evidence synthesis, Rogers (2010) examined social adjustment effects reported from 27 studies and found an average effect size of .14, a very small positive effect. Neihart's (2007) analysis and synthesis identified several studies that reported accelerants had more satisfying social relationships (e.g., Gross & van Vliet, 2005) and that there was no evidence of significant negative effects on social development (e.g., Gagné & Gagnier, 2004). Accelerants have also been compared to normative samples on various measures of social adjustment. For example, Lee et al. (2012) found levels

of perceived interpersonal competence that were comparable to a norming sample and found no relationship between acceleration and social competence in a large study of past participants of Center for Talent Development programs. Such findings imply that acceleration does not negatively affect social competence.

Longitudinal studies. Researchers have also examined changes in social adjustment over time. To that end, several studies have been conducted in residential academies (RA). RAs are state funded residential high schools for gifted adolescents. There are two basic models of RAs; the first is a self-contained school, meaning that it can provide all of the services needed by the students, including the actual courses taken. This model is often referred to as the North Carolina model as it was the first of its kind. The second type is an early entrance to college program, wherein students take their classes in a university, often graduating with both a high school diploma and an Associates degree. The schools range in size from approximately 120 students to approximately 600 students and from serving either two grades (11 & 12) or three grades (10-12). Some schools charge nothing to attend while others now charge a few thousand dollars per year.

In a longitudinal study of students who were enrolled in a residential academy, Cross and Swiatek (2009) found changes in some social coping behaviors, namely that students became more likely to deny giftedness, less likely to engage in extracurricular activities, and more likely to see themselves as accepted by peers. Although an increased likelihood of denial of giftedness may seem to be a negative effect in this setting, it can be viewed as a positive change. Residential academy students have new referent groups that are more similar to self; the increase reflects this shift. Although statistically significant, the adjustment of students' views of themselves was not a large change. The reduction in social activities was explained by lower involvement in extracurricular activities because students found friends through other venues. Overall, changes in social coping strategy use were minor and residential academy students benefitted from accepting peers with similar high ability.

The results of Cross and Swiatek (2009) demonstrated that the appropriate interpretation of changes in social coping behaviors is context dependent. In a heterogeneous ability setting, increases in denial of giftedness may indicate higher levels of engagement in the process of impression management, which is a negative effect because it indicates these students may be hiding their abilities to avoid negative social consequences from age peers. However, in a homogeneous ability setting, the same increase may indicate a more realis-

tic self-appraisal of ability, which is a positive effect because it indicates students have more realistic self-appraisals when compared to cognitive peers. In this way, the same behavioral change can be viewed as a positive or negative adjustment.

Interpersonal ability. Rollins and Cross (2014a) found that residential academy students' interpersonal relations scores did not change appreciably over the course of one year, implying that social adjustment experiences in the new context were similar to those before entering the academy. In other words, the research implies that students' interpersonal abilities are likely established by the beginning of the junior year of high school and unlikely to change appreciably. This is in agreement with the findings of Gross and van Vliet (2005), based on their comparisons of accelerants with nonaccelerants over the course of a 22-year longitudinal study of students with IQs greater than 160. They found that students who had not been provided acceleration opportunities suffered in terms of social relationships and that these problems continued later in life. Gross and van Vliet posited that students learn the social skills associated with friendship early in elementary school and that acceleration should occur before students accumulate negative social experiences caused by a mismatch in emotional maturity between gifted students and nongifted age peers. These findings have important implications for decision makers regarding acceleration -- that the withholding of acceleration opportunities for highly gifted students can have a bigger and longer lasting negative effect on adjustment than the provision of acceleration opportunities.

CONCLUSIONS

Robinson's (2004) synthesis, coupled with the current review, guides our understanding of the effects of acceleration on the social and emotional lives of gifted students. The complex and nuanced studies lead to the primary conclusion that it is important to move from an omnibus statement claiming that acceleration has a positive influence on the social and emotional lives of gifted students to a generally positive, but more qualified statement. For example, there have been relatively few studies across acceleration approaches that have found negative impacts—but there have been some. Cross and Swiatek (2009) found changes among gifted adolescents in a residential academy in some social coping behaviors. The students became more likely to deny giftedness, less likely to engage in extracurricular activities, and more likely to see themselves as accepted by peers. On the other hand, there have been many studies that have found no negative effects and many that found positive effects (Neihart, 2007; Rogers, 2010). Given the fact that most of these studies have relied

on self-reported data (typically from children), retrospective studies, and imperfect instruments with data collected in relatively short periods of time without evidence of long-term effects, one should remain cautious about extrapolating from existing data.

The researchers' limited capacity to utilize research designs that can determine cause and effect adds to the complexities of studying this topic. These types of studies are very difficult to arrange in schools and therefore are quite rare. As a consequence, there are few studies that use the most rigorous designs to determine cause-and-effect relationships among social emotional needs or outcomes and academic acceleration. Most studies are self-report, survey, observation-based, causal-comparative, quasi-experimental, or qualitative in nature. While there are a large number of studies in aggregate on the topic of acceleration, once sorted by their respective variables, very few topics have enough true experimental research underpinning them to be compelling.

At this point, we can say that the effects of acceleration on psychological adjustment vary somewhat by virtue of the type of program (i.e., the degree of acceleration) and the setting or context in which the program exists (Neihart, 2007). In short-term programs, the social-emotional effects are generally positive, but in year-long schools, a drop in self-concept scores may occur (Marsh et al., 1995). We also see some evidence of a similar drop in special classes for gifted students. The observed drop in self-concept associated with some forms of programming and how to interpret that drop merits discussion. Many researchers and educators agree with Sternberg (1999), who noted that to be competitive in challenging fields, a person needs a realistic assessment of his or her abilities. In other words, this realistic appraisal effect, interpreting a drop in self-concept as a potential positive, was not a common view before these types of findings emerged, which warranted further analysis and interpretation.

Research on early entrance to school generally reports positive effects. Gagné and Gagnier's (2004) study revealed that early entrants, as a group, were more adjusted than regular entrants; however, 37% of early entrants were less well-adjusted. This finding, while not common, led to a recommendation to not admit students with a birthday more than three months from the cut-off day for entrance (Robinson, 2004). Obviously, additional long-term research is needed.

Although there are few studies on the social-emotional lives of gifted students who attend early college high school programs, the preliminary results are positive. The published studies have reported on diverse student bodies and have documented positive effects on identity formation and lived experience.

Overall, grade-skipping has shown the most positive effects across acceleration techniques, although a few studies have reported neither a positive or negative effect. Moreover, Gross (2006) reported that the practice of more radical forms of grade-skipping for elementary-aged students with IQ scores 160 and above led to better social self-esteem and social relationships.

Grouping students for instructional purposes receives attention from professionals and laypeople from outside the field of gifted education. Most of the concerns about grouping were primarily philosophically based. The criticisms have tended to treat all forms of grouping as tracking students, a practice long rejected by gifted educators and general educators alike. Empirically there is support of flexible grouping techniques as having positive effects on the social and emotional lives of gifted students.

While researchers and gifted educators have much to be optimistic about, we have the most data representing gifted students from summer programs held at universities or in schools, ranging primarily from middle- to upper-middle-class students, most often with very little diversity represented. But once we shift our focus to students who come from more diverse backgrounds or from financially impoverished backgrounds, our data drops off significantly—so much so that the recommendation is to not make unqualified claims until more research is conducted. For example, although one would be hard pressed to make a case that acceleration causes harm to White students from middle- and upper-middle-class backgrounds, we cannot say with confidence that the same is equally true for gifted students from underrepresented groups who attend schools as minority students. Emerging research shows that the acceleration of minority students has positive effects academically and social-emotionally when the students attended schools in which there was a minority majority (e.g. Black students were accelerated in a school with a predominantly Black population). However, the research base in this area is quite limited.

It is time to explore and portray this topic in increasingly sophisticated developmental ways. By focusing more on development over time, myriad ways in which acceleration can affect the gifted students who participate—and those who do not—will be made more evident. The progress made to date has well positioned us to go deeper into the topics by incorporating important psychological constructs that have yet to be included. Recent examples of expanding research on the impact of acceleration on the social and emotional lives of gifted students include:

- needing a more diverse student body;
- drawing on new psychological constructs and/or instruments;
- increasing the number and types of study designs;
- conducting delayed or follow-up assessments over time;
- emphasizing context;
- increasing the number of qualitative studies; and
- expanding the variables and factors studied.

Movement in this direction will better address our questions about the effects of acceleration on the social and emotional lives of gifted students.

REFERENCES

- Adams-Byers, J., Whitsell, S. S., & Moon, S. M. (2004). Gifted students' perceptions of the academic and social/emotional effects of homogeneous and heterogeneous grouping. *Gifted Child Quarterly*, 48, 7–20. doi:10.1177/001698620404800102
- Assouline, S. G., Marron, M., & Colangelo, N. (2014). Acceleration. In J. A. Plucker & C. M. Callahan (Eds.), *Critical issues and practices in gifted education* (2nd ed., pp. 15–28). Waco, TX: Prufrock Press.
- Baker, J. A., Bridger, R., & Evans, K. (1998). Models of underachievement among gifted preadolescents: The role of personal, family, and school factors. *Gifted Child Quarterly*, 42, 5–15.
- Barnette, E. L. (1989). A program to meet the emotional and social needs of gifted and talented adolescents. *Journal of Counseling and Development*, 67, 525–528.
- Benbow, C. P., & Stanley, J. C. (1996). Inequity in equity: How “equity” can lead to inequity for high-potential students. *Psychology, Public Policy, and the Law*, 2, 249–292.
- Boazman, J., & Sayler, M. (2011). Personal well-being of gifted students following participation in an early college-entrance program. *Roeper Review*, 33, 76–85.
- Brookby, S. A. (2004). Academic self-efficacy and social self-concept of mathematically gifted high school students in a summer residential program. *Dissertation Abstracts International*, 65, 1707.
- Burlingame, G., Wells, M., & Lambert, M. (2004). Youth Outcome Questionnaire (YOQ). In M. Maruish (Ed.), *The use of psychological testing for treatment planning and outcomes assessment*, 2, (3rd ed., pp. 235–274). Mahwah, NJ: Lawrence Erlbaum.
- Coleman, J. M., & Fults, B. A. (1982). Self-concept and the gifted classroom: The role of social comparisons. *Gifted Child Quarterly*, 26, 116–120.
- Cross, T. L., & Coleman, L. J. (2005). *Being gifted in school*. Waco, TX: Prufrock Press.
- Cross, T. L., & Swiatek, M. A. (2009). Social coping among academically gifted adolescents in a residential setting: A longitudinal study. *Gifted Child Quarterly*, 53, 25–33. doi:10.1177/0016986208326554

- Cunningham, L. G., & Rinn, A. N. (2007). The role of gender and previous participation in a summer program on gifted adolescents' self-concepts over time. *Journal for the Education of the Gifted*, 30, 326–352.
- Dai, D. Y., & Rinn, A. N. (2008). The big-fish-little-pond effect: What do we know and where do we go from here? *Educational Psychological Review*, 20, 283–317.
- Daurio, S. P. (1979). Educational enrichment versus acceleration: A review of the literature. In W. C. George, S. J. Cohn, & J. C. Stanley (Eds.), *Educating the gifted* (pp. 3–63). Baltimore, MD: The Johns Hopkins University Press.
- Eisenberg, A., & George, W. (1979, Winter). Early entrance to college: The Johns Hopkins experience. *College and University*, 109–118.
- Feldhusen, J. F., & Moon, S. M. (1992). Grouping gifted students: Issues and concerns. *Gifted Child Quarterly*, 65, 63–67.
- Gagné, F., & Gagnier, N. (2004). The socio-affective and academic impact of early entrance to school. *Roeper Review*, 26, 128–138.
- Goldring, E. B. (1990). Assessing the status of information on classroom organizational frameworks for gifted students. *Journal of Educational Research*, 83, 313–326.
- Gross, M. U. M. (1989). The pursuit of excellence or the search for intimacy? The forced-choice dilemma of gifted youth. *Roeper Review*, 11, 189–194.
- 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., & van Vliet, H. E. (2005). Radical acceleration and early entry to college: A review of the research. *Gifted Child Quarterly*, 49, 154–171.
- Harter, S. (1988). *Self-perception profile for adolescents*. Unpublished manual, University of Denver.
- Heilbronner, N. N., Connell, E. E., Dobyms, S. M., & Reis, S. M. (2010). The “Stepping Stone Phenomenon”: Exploring the role of positive attrition at an early college entrance program. *Journal of Advanced Academics*, 21, 392–425.
- 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.
- Karnes, A. F. & Wherry, J. N. (1981). Self-concepts of gifted students as measured by the Piers-Harris Children's Self-Concept Scale. *Psychological Reports*, 49, 903–906.
- Koloff, P. B., & Moore, A. D. (1989). Effects of summer programs on the self-concepts of gifted children. *Journal for the Education of the Gifted*, 12, 268–276.
- Kulik, J. A., & Kulik, C. C. (1987). Effects of ability grouping on student achievement. *Equity & Excellence*, 23, 22–30.
- Kulik, C. L., & Kulik, J. A. (1991). Ability grouping and gifted students. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (pp. 178–196). Boston, MA: Allyn & Bacon.
- Kulik, C. L., & Kulik, J. A. (1997). Ability grouping. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (2nd ed., pp. 230–242). Boston, MA: Allyn & Bacon.
- Lee, S.-Y., Olszewski-Kubilius, P., & Peternel, G. (2010). The efficacy of academic acceleration for gifted minority students. *Gifted Child Quarterly*, 54, 189–208. doi:10.1177/0016986210369256
- Lee, S.-Y., Olszewski-Kubilius, P., & Thomson, D. T. (2012). Academically gifted students' perceived interpersonal competence and peer relationships. *Gifted Child Quarterly*, 56, 90–104. doi:10.1177/0016986212442568
- Little, C. A., Kearney, K. L., & Britner, P. A. (2010). Students' self-concept and perceptions of mentoring relationships in a summer mentorship program for talented adolescents. *Roeper Review*, 32, 189–199. doi:10.1080/02783193.2010.485307
- Maddux, C. D., Scheicher, L. M., & Bass, J. E. (1982). Self-concept and social distance in gifted children. *Gifted Child Quarterly*, 26, 77–81.
- Marsh, H. W. (1990). *Self-Description Questionnaire (SDQ) II: Manual*. New South Wales, Australia: University of Western Sydney.
- Marsh, H. W., Chessor, D., Craven, R., & Roche, L. (1995). The effects of gifted and talented programs on academic self-concept: The big fish strikes again. *American Educational Research Journal*, 32, 285–319.
- Marsh, H. W., & Craven, R. (2002). The pivotal role of frames of reference in academic self-concept formation: The big-fish-little-pond effect. In F. Pajares, & T. Urdan (Eds.) *Adolescence and education* (Vol. 2; pp. 883–123). Greenwich, CT: Information Age.
- Marsh, H. W., & Hau, K. (2003). Big-fish-little-pond-effect on academic self-concept: A cross-cultural (26 country) test of the negative effects of academically selective schools. *American Psychologist*, 58, 364–376.
- McCain, J. A. (2012). “You've got to want to do!”: An examination of the construction of academic identity among high-achieving African American high school adolescents. *ProQuest Dissertations and Theses*. Retrieved from <http://search.proquest.com.er.lib.k-state.edu/docview/1022181287>.
- McDonald, D., & Farrell, T. (2012). Out of the mouths of babes: Early college high school students' transformational learning experiences. *Journal of Advanced Academics*, 23, 217–248. doi:10.1177/1932202X12451440
- McQuilkin, G. E. (1981). A comparison of personal and social concepts of gifted elementary students in different school programs. *Dissertation Abstracts*, 8100704.
- Moon, S. M., Nelson, T. S., & Piercy, F. P. (1993). Family therapy with a highly gifted adolescent. *Journal of Family Psychology*, 4(3), 1–16.
- Moon, S. M., Swift, M., & Shallenberger, A. (2002). Perceptions of a self-contained class for fourth and fifth-grade students with high to extreme levels of intellectual giftedness. *Gifted Child Quarterly*, 46, 64–79.
- Neihart, M. (2007). The socioaffective impact of acceleration and ability grouping: Recommendations for best practice. *Gifted Child Quarterly*, 51, 330–341. doi:10.1177/0016986207306319
- Oakes, J. (1990). *Multiplying inequalities: The effects of race, social class, and tracking on opportunities to learn math and science*. Santa Monica, CA: RAND.
- Oakes, J. (1992, May). Can tracking research inform practice? Technical, normative, and political considerations. *Educational Researcher*, 12–21.
- Parker, J. P. (1998). The Torrance Creative Scholars Program. *Roeper Review*, 21, 32–35.
- Preckel, F., Götz, T., & Frenzel, A. (2010). Ability grouping of gifted students: Effects on academic self-concept and boredom. *The British Journal of Educational Psychology*, 80, 451–72. doi:10.1348/000709909X480716
- Rinn, A. N. (2006). Effects of a summer program on the social self-concepts of gifted adolescents. *The Journal of Secondary Gifted Education*, 17, 65–75.
- Robinson, N. M. (2004). Effects of academic acceleration on the social-emotional status of gifted students. In N. Colangelo, S. G. As-souline, & M. U. M. Gross (Eds.), *A nation deceived: How schools hold back America's brightest students* (V.II., pp. 59–67). Iowa City, IA: The Connie Belin and Jacqueline N. Blank International Center for Gifted Education and Talent Development.
- Rogers, K. B. (1991). *Relationship of grouping practices to the education of the gifted and talented learners*. Storrs: University of Connecticut, The National Research Center on the Gifted and Talented.

- Rogers, K. B. (1992). A best-evidence synthesis of research on acceleration options for gifted students. In N. Colangelo, S. G. Assouline, & D. L. Ambrose (Eds.), *Talent development: Proceedings of the 1991 Henry B. and Jocelyn Wallace National Research Symposium on Talent Development* (pp. 406–409). Unionville, NY: Trillium Press.
- Rogers, K. (2004). The academic effects of acceleration. In N. Colangelo, S. G. Assouline, & M. Gross (Eds.), *A nation deceived: How schools hold back America's brightest students* (VII., pp. 47-57). Iowa City, IA: The Connie Belin and Jacqueline N. Blank International Center for Gifted Education and Talent Development.
- Rogers, K. B. (2010). Academic acceleration and giftedness: The research from 1990 to 2008. A best-evidence synthesis. In *Proceedings of the Acceleration Poster Session at the 2008 Wallace Research Symposium on Talent Development* (pp. 1–6). Iowa City, IA: The Institute for Research and Policy on Acceleration at the Connie Belin & Jacqueline N. Blank International Center for Gifted Education and Talent Development.
- Rollins, M. R., & Cross, T. L. (2014a). A deeper investigation into the psychological changes of intellectually gifted students attending a residential academy. *Roepers Review*, 36, 18–29. doi:10.1080/02783193.2014.856372
- Rollins, M. R., & Cross, T. L. (2014b). Assessing the psychological changes of gifted students attending a residential high school with an outcome measurement. *Journal for the Education of the Gifted*, 37(4), 337-354.
- 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.
- Silverman, L. K. (1997). The construct of asynchronous development. *Peabody Journal of Education*, 72(3-4), 36–58.
- Slavin, R. E. (1990). Achievement effects of ability grouping in secondary schools: A best-evidence synthesis. *Review of Educational Research*, 60, 471–499.
- Steenbergen-Hu, S., & Moon, S. M. (2011). The effects of acceleration on high-ability learners: A meta-analysis. *Gifted Child Quarterly*, 55, 39–53. doi:10.1177/0016986210383155
- Sternberg, R. (1999). The theory of successful intelligence. *Review of General Psychology*, 3, 292–316.
- Worchester, D. A. (1956). *The education of children of above-average mentality*. Lincoln: University of Nebraska Press.
- Wright, P. B., & Leroux, J. A. (1997). The self-concept of gifted adolescents in a congregated program. *Gifted Child Quarterly*, 41, 83–94.