

Self-Concept Development of Students With Disabilities: Disability Category, Gender, and Racial Differences From Early Elementary to High School

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Abstract

Developmental trajectories of two self-concept constructs (self-confidence and importance beliefs) in three domains (academic, social, and self-image) were estimated in a nationally representative sample of approximately 3,500 students with disabilities ages 8 to 17 representing 11 federal disability categories. Students' self-confidence in the three domains declined in elementary school but rebounded in secondary school, whereas their importance beliefs showed linear declines over time. The authors found significant mean differences in self-concept but similarities in the shape of trajectories across disability categories, gender, and race. Students with emotional disturbances or autism had significantly lower self-confidence in the social and self-image domains and lower academic importance beliefs than students with learning disabilities. Girls had significantly higher self-confidence and importance beliefs than boys. Compared to their white peers, Black students had significantly higher self-confidence in all domains, whereas Hispanic students had significantly lower levels of importance beliefs in the social and self-image domains.

Keywords

self-concept, students with disabilities, disability category, gender, race, hierarchical linear modeling

Self-concept describes “the totality of the individual’s thoughts and feelings having reference to himself as an object” (Rosenberg, 1989, p. 34). Self-concept has long interested researchers because it facilitates academic achievement, social competence, and mental health through its effect on motivation (Eccles, Wigfield, & Schiefele, 1998). In general, students with a healthy self-concept think of themselves as valuable and competent, are motivated to do well in school, try hard when they face difficulties, have harmonious relationships with family and friends, and exhibit fewer behavior problems (Eccles et al., 1998; Markus & Wurf, 1987).

Given the important role of self-concept on learning and behavior outcomes, it is important to understand how students' self-concept develops. Many studies have explored such development in students without disabilities; however, relatively few studies have focused on the development of self-concept in students with disabilities, typically comparing only students with learning disabilities to their nondisabled peers at a single point in time. Little is known about the development of self-concept for students with other types of disabilities, who make up approximately 55% of students with disabilities—3.39 million students (Child Count, 2007). Such knowledge is critical to informing efforts to help all

students with disabilities build a healthy self-concept, which may lead to positive academic and behavior outcomes.

There is consensus that self-concept has multiple dimensions (Byrne & Shavelson, 1996). Some researchers posit that self-concept includes two related constructs: the appraisal of one’s capabilities to perform certain tasks or to have certain attributes (hereinafter referred to as *self-confidence*) and the evaluation of being able to perform those tasks or having those characteristics (hereinafter referred to as *importance beliefs* or *task value beliefs*; Shavelson, Hubner, & Stanton, 1976). Both constructs were found to be critical to motivation, activity choices, and performance. For example, when students believe they are capable of accomplishing given tasks and place a high value on being competent at those tasks, they are usually more motivated, participate more often, and perform better (Bandura, 1994; Covington, 1984; Eccles et al., 1998; Markus & Wurf, 1987; Weiner, 1985).

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In addition to including two constructs, an individual's total self-concept also comprises multiple domains. Academic self-concept may be distinguished from nonacademic self-concept, which includes domains such as social competence, physical competence, and appearance. Recent research has examined domain-specific self-confidence, task value beliefs, motivation, and performance (Eccles et al., 1998), with some studies finding domain-specific relationships only. Because the different self-concept domains may have distinct contributions to domain outcomes, it is important to examine them separately.

Differences in self-concept between students with learning disabilities and students without disabilities have been addressed in a number of studies. Students with learning disabilities had lower academic self-concept levels than average- and low-achieving students without disabilities (for a review, see Chapman, 1988; Zeleke, 2004). In contrast, studies on the social self-concept and overall self-concept of students with learning disabilities have had inconsistent findings. Out of the 29 studies that compared students with and without learning disabilities in social self-concept, 21 found no difference between the two groups, 6 found students with learning disabilities to have lower social self-concept, and 2 found students with learning disabilities to have higher social self-concept (Zeleke, 2004). Out of the 28 studies that compared the two groups in terms of their overall self-concept, 19 found no difference, 1 found no difference as long as the students with learning disabilities had no comorbid behavior problems (in which case, they had lower levels than their nondisabled peers), and 8 found students with learning disabilities to have lower overall self-concept levels (Zeleke, 2004).

Research on self-concept among students without disabilities reported that early adolescence is a critical transition period, with self-concept ebbing in early adolescence but recovering following the transition to junior high (Eccles et al., 1993; Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002; Nottelmann, 1987). The academic self-concept of students with learning disabilities was assumed to have an inverse relationship with age because ongoing academic struggles and poor performance might exacerbate an already low self-concept (Chapman, 1988). However, empirical studies examining the developmental trend of self-concept in students with learning disabilities yielded mixed results. The majority of the studies found no change in academic self-concept with age (Zeleke, 2004); however, a few studies found a declining trend (Leonadari, 1993). Findings regarding changes in social self-concept of students with learning disabilities by age are also mixed. Some studies found no differences by age, whereas others found a more positive social self-concept among older students than among younger students (Zeleke, 2004).

Relatively little is known about how self-concept develops among students in most disability categories. Most studies of students in other disability categories compared students from a single disability group to students without disabilities at a single point in time. For example, compared to the

self-confidence levels of their peers without disabilities, lower levels of self-concept were found among students with intellectual disabilities or emotional disturbance (Evans, 1998), adolescents with major depressive disorder (Koenig, 1988), students with visual impairment (Beaty, 1991), students with traumatic brain injury (Andrews, Rose, & Johnson, 1998), 10- to 13-year-olds with speech or language impairments (Jerome, Fujiki, Brinton, & James, 2002), and students with autism (Lind & Bowler, 2009; Toichi et al., 2002)—the latter particularly with regard to social self-concept (Lee & Hobson, 1998). However, no self-concept deficit was found for students classified with conduct disorders (Koenig, 1988) or for 6- to 9-year-olds with speech or language impairments (Jerome et al., 2002).

Research on students in the general population has found some differences in self-concept between boys and girls and among students from different racial/ethnic backgrounds. Using a nationally representative sample, Gresham (1995) found that, compared to boys, girls rated their self-confidence and importance beliefs higher in the academic and social domains but lower in the self-image domain. Some studies showed variations in gender differences by subject area, for example, with girls having higher self-confidence in English but boys having higher self-confidence in sports and math (Crain, 1996; Eccles et al., 1993; Marsh & Yeung, 1998).

Findings for racial differences on self-concept are mixed. Using data for the general population of students, some researchers found Black students to have higher overall self-image than White students and White students to have higher overall self-concept than Hispanic, Asian, or American Indian students, with all differences growing larger with age (Twenge & Crocker, 2002). In contrast, other studies also found Black students to have lower levels of overall self-concept and behavioral self-concept than White or Hispanic students (Kenny & McEachern, 2009) but higher levels of physical self-concept (Crain, 1996) than White or Hispanic students.

To understand how self-concept develops for students with disabilities, this study answers the following research questions: (a) What are the developmental trajectories of self-confidence and importance beliefs in the academic, social, and self-image domains for students with disabilities from age 8 to age 17? (b) How do the developmental trajectories differ between students with learning disabilities and students in the other 10 disability categories? (c) How do they differ by gender and race/ethnicity?

Method

Sample

Our analyses relied on the Special Education Elementary Longitudinal Study (SEELS) data set (SRI International, 1998). Four features of SEELS make it useful to address the current study's research questions: (a) a two-stage sampling

Table 1. Items in the Special Education Elementary Longitudinal Study's Abbreviated Version of the Student Self-Concept Scale and Cronbach's Alpha, by Domain

Academic	Social	Overall
I follow classroom rules.	I can take turns in games or other activities.	I am fun to be with.
I can do my homework on time.	I can do things to be liked by my classmates.	I am proud of who I am.
I can listen when my teacher is presenting a lesson.	I can talk things over calmly with kids my age when we disagree.	I am a nice person.
I can speak in class when my teacher calls on me.	I can make friends easily.	I am easy to like.
I can finish my schoolwork easily.	I can tell classmates when they upset me or hurt my feelings.	I can look as nice as other kids my age.
$\alpha = .73$	$\alpha = .68$	$\alpha = .70$

procedure, enabling generalization to the national population of students with disabilities as a whole and to students in each disability category; (b) a cross-sequential design, with three waves of data collection in 2001, 2002, and 2004 for a national sample of students who were ages 6 through 12 and receiving special education services in December 1, 1999; (c) inclusion of data from a face-to-face assessment of self-concept; and (d) inclusion of data on student demographics and mother's education level, which support the examination of factors related to variations in self-concept development.

The sample of students in the analysis was weighted to represent students in each disability category nationwide. In the weighted Wave 1 (2001) sample, students with learning disabilities represented approximately 43% of the sample, and students with speech impairments represented approximately 33%. At the other end of the continuum, students with visual impairments or traumatic brain injury were less than 1% of the sample. The sample was 68% male as well as 66% White, 19% Black, and 13% Hispanic or Latino. The average age at Wave 1 was about 11. Mother's highest education level was coded as 1 = *less than high school*, 2 = *high school graduate or General Educational Development (GED) test recipient*, 3 = *some college*, and 4 = *bachelor's degree or higher*. The mean is 2.41.

Measurement

Student self-concept. Six outcome variables were used in this study: self-confidence in the academic, social, and self-image domains and beliefs about the importance of being able to perform tasks or having attributes in the same three domains. This study used a 15-item version (5 items in each domain; see Table 1) of the *Student Self-Concept Scale* (SSCS; Gresham, Elliott, & Evans-Fernandez, 1992) administered by SEELS to students age 8 or older at the time the data were collected. Although SSCS was designed for students in Grades 3 through 12 whose reading ability is at or above the Grade 3 level, the assessor may read the test items to the students if their reading level is below Grade 3 (Gresham, 1995). For each item, the assessor read a statement to the child and asked the child to

rate his or her level of confidence regarding the statement using a 3-point scale (1 = *not at all confident*, 2 = *not sure*, 3 = *confident*) and then to rate his or her belief regarding the importance of the task or the attribute rating using a 3-point scale (1 = *not important*, 2 = *important*, 3 = *very important*). Self-confidence or importance belief scores for each domain were calculated by averaging scores for students who completed three or more items in that domain. Data for students who completed fewer than three items were not used. The internal consistency reliabilities of the domain scores ranged from .68 to .73.

Disability and demographic measures. Students' disability category was obtained from school district rosters submitted to SEELS in fall of 1999. Students were classified according to their primary disability category on the rosters using the 12 categories from the Individuals with Disabilities Education Act: learning disabilities, speech impairments, intellectual disabilities, emotional disturbance, hearing impairments (including deafness), visual impairments (including blindness), other health impairments, orthopedic impairments, traumatic brain injury, autism, deaf-blindness, and multiple disabilities. Students in the deaf-blindness category were excluded from the current study's analyses because of an insufficient sample size (fewer than 10 valid and complete observations). Data for demographic variables (gender, race/ethnicity, and mother's education) come from the parent interviews.

Hierarchical Linear Modeling

Because repeated measures of self-concept for each student are correlated, it is important to adjust for the dependency in the data. Hierarchical linear modeling (HLM; Bryk & Raudenbush, 2002) is appropriate for this purpose because it takes into account the nesting of observations within each individual. We estimated the development of students' self-confidence and importance beliefs in the academic, social, and overall self-image domains using a two-level HLM. Level 1 included repeated measures of the dependent variable, age, and (to allow for nonlinearities) age-squared. Level 2 included student disability category, gender, race, and mother's

Table 2. Hierarchical Linear Modeling Models for Development of Self-Confidence in Three Domains for Students With Disabilities, Centering Age at the Mean

Fixed effect	Academic			Social			Overall self-image		
	Mean	Slope of age	Slope of age-squared	Mean	Slope of age	Slope of age-squared	Mean	Slope of age	Slope of age-squared
Unconditional model									
Intercept	2.57***	-0.001***	0.005***	2.49***	0.002	0.006***	2.62***	0.01***	0.005*
Full model									
Intercept	2.55***	-0.01*	0.009***	2.51***	-0.004	0.008***	2.64***	0.02**	0.005*
Speech impairment	0.10***	0.003	-0.001	0.02	-0.001	-0.002	0.01	-0.0001	0.003
Intellectual disabilities	0.04*	-0.005	0.001	0.02	-0.02	-0.007*	0.01	-0.03**	0.002
Emotional disturbance	-0.04	-0.007	0.001	-0.06**	0.008	0.0002	-0.04*	-0.002	0.001
Other health impairment	-0.02	0.01	-0.002	-0.01	0.01	-0.004	-0.008	0.005	-0.003
Orthopedic impairment	0.12***	0.006	-0.006	0.05	-0.003	-0.004	0.05	-0.004	-0.003
Hearing impairment	0.08**	0.001	-0.006	-0.002	-0.009	-0.002	-0.006	-0.01	-0.0004
Multiple disabilities	0.06	0.005	-0.004	0.003	-0.002	-0.003	0.05	-0.005	0.0003
Autism	0.01	0.01	-0.0004	-0.11***	-0.008	-0.001	-0.08**	-0.009	0.005
Visual impairment	0.16**	0.02	-0.006	0.12*	0.02	-0.009	0.06	0.01	-0.006
Traumatic brain injury	0.08	0.005	-0.01	0.02	-0.03	-0.008	0.05	-0.02	-0.004
Male	-0.02	0.003	-0.004*	-0.04**	0.01	0.001	-0.05***	-0.004	0.0008
Black	0.05**	0.02*	-0.002	0.05**	0.01	-0.004	0.09***	0.01	-0.002
Hispanic or Latino	-0.03	-0.02	-0.001	0.0004	0.0002	-0.005*	0.008	-0.005	-0.003
Other	-0.09*	0.003	-0.002	0.02	0.02	-0.006	0.008	0.006	-0.006
Mother's education	0.03***	0.004	-0.002*	0.02**	0.004	-0.002*	0.009	0.003	-0.0009
Random effect									
Variance	0.07***	0.01**		0.07***	0.01***		0.06***	0.009***	
Residual variance	0.06***			0.05***			0.05***		

White female students with learning disability are the reference group.

* $p < .05$. ** $p < .01$. *** $p < .001$.

education level. We modeled the intercept and slope of age as random effects and disability and demographic variables as fixed effects. Restricted maximum likelihood estimation with an unstructured covariance was specified. The full models are included in the online appendix (available at <http://rse.sagepub.com/supplemental>).

Missing Data

At Level 1, HLM takes advantage of all available data points. After excluding students with deaf-blindness and students to whom the SSCS was not administered because they were younger than 8 years old, SEELS includes 2,154 students with all three waves of data, 2,426 students with two waves of data, and 1,190 students with one wave of data. Thus, Level 1 analyses included all 5,770 students with one, two, or three waves of outcome data. For Level 2, HLM requires that observations have nonmissing data for all covariates. Thus, Level 2 analyses excluded about 372 students with missing data for disability or demographic variables.

Results

Trajectories of Self-Concept for Students With Disabilities—Unconditional Models

To estimate the general trend in the development of self-concept for students with disabilities, we fitted “unconditional” growth-curve models for each of the six outcome variables. In our case, the “unconditional” models use only two variables, age and age-squared, to predict students’ trajectories of self-concept. The first row of coefficients, labeled “intercept” under “unconditional model” in Tables 2 and 3, presents these findings. To facilitate understanding of the trends in each aspect of self-concept development, we plotted the estimated developmental trajectories for students of disabilities as a group in Figure 1.

Self-confidence. The coefficients for the intercept are positive and significant, which means the average levels of self-confidence of 12-year-olds with disabilities were 2.57 for academic self-confidence, 2.49 for social self-confidence, and 2.62 for self-image confidence, respectively. The slope

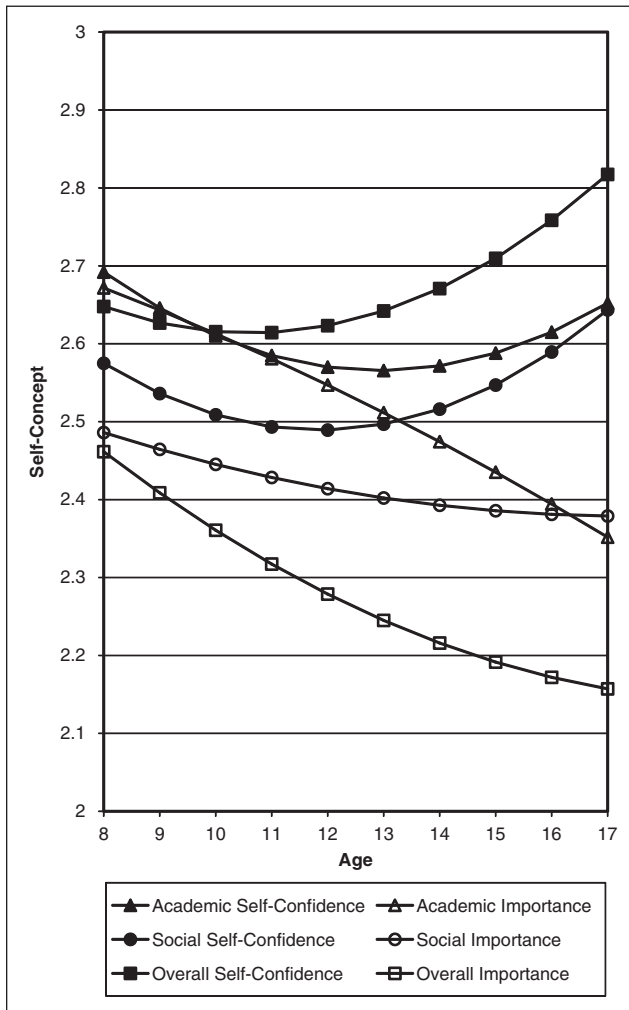


Figure 1. Self-concept development by domain for students with disabilities

of age variable is negative and significant for academic self-confidence ($\gamma_{10} = -.001, p < .001$), not significant for social self-confidence, and positive and significant for self-image confidence ($\gamma_{10} = .01, p < .001$). The statistically significant coefficients of the quadratic age variable indicate a clear curvilinear relationship between age and self-confidence rating for all three domains (academic: $\gamma_{20} = .005, p < .001$; social: $\gamma_{20} = .006, p < .001$; overall: $\gamma_{20} = .005, p < .05$). Figure 1 shows the U shape of the curves. For students with disabilities as a group, academic self-confidence rating was highest at age 8, fell to its lowest point around age 12 to 14, and then increased to approximately the same level as for 9-year-olds by age 17. Social self-confidence was lowest around age 11 to 13 but recovered afterward, ultimately surpassing the level for 8-year-olds. Self-image confidence declined to its lowest point around age 9 or 10 but increased to its high point at age 17.

Importance beliefs. The negative coefficients of the slope of age (academic: $\gamma_{20} = -.03, p < .001$; social: $\gamma_{20} = -.04, p < .001$; self-image: $\gamma_{20} = -.01, p < .001$) and the lack of statistical significance for the quadratic age variable (except for the social domain $\gamma_{20} = .002, p < .001$) suggest a negative, fairly linear relationship of importance beliefs with age (Table 3). Figure 1 shows that importance beliefs were the highest at age 8 and declined to their lowest point at age 17 for students with disabilities. Academic and social importance beliefs declined at about the same rate, whereas self-image importance beliefs declined at a slower rate.

Disability Category Differences in Self-Concept—Full Model

We compared the developmental trajectories of self-concept between students with learning disabilities and students in each other disability category. Each row in Tables 2 and 3 indicates the difference between students in the disability category named on the row and the reference group (White female students with learning disabilities). The coefficient in the “mean” column indicates the difference in the level of self-confidence between the named group and the reference group at the mean age (12.68). The coefficients in the “slope of age,” and “slope of age-squared” columns represent the difference in slope and acceleration between the named group and the reference group.

Self-confidence. Table 2 and Figure 2 show that, relative to students with learning disabilities, students in five disability categories had significantly higher levels of academic self-confidence: students with speech or language impairments ($\gamma_{01} = .10, p < .001$), intellectual disabilities ($\gamma_{01} = .04, p < .05$), hearing impairments ($\gamma_{01} = .08, p < .01$), visual impairments ($\gamma_{01} = .16, p < .01$), or orthopedic impairments ($\gamma_{01} = .12, p < .001$). Students in two categories had lower levels of social self-confidence and self-image confidence: students with emotional disturbance (social: $\gamma_{01} = -.06, p < .01$; overall: $\gamma_{01} = -.04, p < .05$) or autism (social: $\gamma_{01} = -.11, p < .001$; self-image: $\gamma_{01} = -.08, p < .01$). With one exception, students in each other disability category did not differ from students with learning disabilities in terms of their slope or rate of change for the three self confidence domains. The exception was students with intellectual disabilities, whose self-image confidence declined significantly faster than that of students with learning disabilities ($\gamma_{11} = -.007, p < .05$).

Importance beliefs. At 12.68 years of age, students with speech or language impairments ($\gamma_{01} = .07, p < .001$) assigned significantly higher ratings to academic tasks than did students with learning disabilities, whereas students with emotional disturbance ($\gamma_{01} = -.09, p < .001$) or autism ($\gamma_{01} = -.07, p < .05$) assigned significantly lower ratings (see Table 3 and Figure 3). The rate of decline in academic importance beliefs was significantly slower for students with other health impairments ($\gamma_{11} = .03, p < .01$) or autism ($\gamma_{11} = .05, p < .001$) than for students with learning disabilities. The academic importance

Table 3. Hierarchical Linear Modeling Models for Development of Task Value Beliefs in Three Domains for Students With Disabilities, Centering Age at the Mean

Fixed effect	Academic			Social			Overall self-image		
	Mean	Slope of age	Slope of age-squared	Mean	Slope of age	Slope of age-squared	Mean	Slope of age	Slope of age-squared
Unconditional model									
Intercept	2.55***	-0.03***	-0.0009	2.28***	-0.04***	0.002***	2.41***	-0.01***	0.001
Full model									
Intercept	2.59***	-0.05***	0.003	2.37***	-0.07***	0.006*	2.46***	-0.03***	0.004
Speech impairment	0.07***	-0.001	-0.01	0.008	0.03**	-0.01***	-0.006	0.02*	-0.002
Intellectual disabilities	0.01	0.02	-0.001	0.10***	0.03*	-0.01**	0.11***	0.004	-0.01**
Emotional disturbance	-0.09***	-0.004	0.002	0.006	0.02	-0.006	0.001	-0.005	-0.001
Other health impairment	0.004	0.03**	-0.003	0.02	0.04***	-0.007	0.05	0.03*	-0.007
Orthopedic impairment	0.04	0.02	-0.002	0.07*	0.04*	-0.004	0.06	0.02	-0.001
Hearing impairment	0.008	0.02	-0.005	-0.030	0.04*	-0.005	-0.04	0.02	-0.003
Multiple disabilities	0.005	0.03	0.002	0.04	0.05*	0.005	0.01	0.03	0.006
Autism	-0.07*	0.05***	0.002	-0.02	0.05**	-0.004	-0.03	0.03	0.001
Visual impairment	0.09	0.02	-0.002	0.12*	0.04	-0.009	0.09	0.02	-0.007
Traumatic brain injury	0.03	0.02	-0.004	0.08	0.02	-0.004	0.12	0.01	-0.009
Male	-0.07***	-0.005	-0.002	-0.11***	0.004	0.002	-0.07***	0.006	-0.002
Black	0.04*	0.01	-0.002	-0.10***	0.002	0.0001	-0.03	0.01	0.003
Hispanic or Latino	-0.02	-0.0007	0.005	-0.10***	0.01	0.006*	-0.08**	0.002	0.005
Other	-0.11**	0.03	0.003	-0.11*	0.02	-0.006	-0.18***	0.006	0.01
Mother's education	0.02*	0.005	-0.002*	0.03***	0.003	-0.002	0.03***	0.002	-0.003
Random effect									
Variance	0.07***	0.01**		0.10***	0.02***		0.10***	0.02***	
Residual variance	0.07***			0.08***			0.07***		

White female students with learning disability are the reference group.

* $p < .05$. ** $p < .01$. *** $p < .001$.

beliefs of students with autism stayed the same as they got older, as indicated by the slope of zero.

Twelve-year-olds in three disability categories assigned significantly higher importance to social tasks than their age-mates with learning disabilities: intellectual disabilities ($\gamma_{01} = .10, p < .001$), orthopedic impairments ($\gamma_{01} = .07, p < .05$), and visual impairments ($\gamma_{01} = .12, p < .05$). However, compared to the age-related decline in social importance beliefs among students with learning disabilities, the decline was slower for students with speech impairments ($\gamma_{11} = .03, p < .01$), intellectual disabilities ($\gamma_{11} = .03, p < .05$), other health impairments ($\gamma_{11} = .04, p < .001$), orthopedic impairments ($\gamma_{11} = .04, p < .05$), hearing impairments ($\gamma_{11} = .04, p < .05$), multiple disabilities ($\gamma_{11} = .05, p < .05$), or autism ($\gamma_{11} = .05, p < .01$).

Self-image importance beliefs were higher among 12-year-olds with intellectual disabilities than among their peers with learning disabilities ($\gamma_{01} = .11, p < .001$). With the exception of students with intellectual disabilities, there were no significant differences in self-image importance beliefs between 12-year-olds with learning disabilities and their peers in each

other disability category; however, rates of decline in self-image importance beliefs were slower for students with speech impairments ($\gamma_{11} = .02, p < .05$) or other health impairments ($\gamma_{11} = .03, p < .05$) than for students with learning disabilities.

Gender Differences in Self-Concept Development

Boys with disabilities were lower than girls on two measures of self-confidence (social: $\gamma_{01} = -.04, p < .01$; self-image: $\gamma_{01} = -.05, p < .001$) and all three measures of importance beliefs (academic: $\gamma_{01} = -.07, p < .001$; social: $\gamma_{01} = -.11, p < .001$; self-image: $\gamma_{01} = -.07, p < .001$). However, no significant gender differences were found for slope or rate of change on either measure, suggesting that the gender gap in self-confidence persisted over time. The negative coefficient of "male" in the age-squared column of the academic self-confidence domain indicates that the male trajectory has a deeper dip than the female trajectory.

Racial Differences in Self-Concept Development

Black students with disabilities had significantly higher self-confidence than White students in all three domains (academic: $\gamma_{03} = .05, p < .01$; social: $\gamma_{03} = .05, p < .01$; self-image: $\gamma_{03} = .09, p < .001$) and academic importance beliefs ($\gamma_{03} = .04, p < .05$) but significantly lower social importance beliefs ($\gamma_{03} = -.10, p < .001$). The nonsignificant differences between Black and White students in slope and rate of change indicate that White–Black gaps in self-confidence and importance beliefs remain similar over time. No significant differences were found between White and Hispanic or Latino students in average self-confidence in three domains, but social self-confidence decelerated faster among Hispanic or Latino students' than among their White peers ($\gamma_{23} = -.005, p < .05$). Compared to White students with disabilities, Hispanic or Latino students had significantly lower mean social importance beliefs ($\gamma_{01} = -.10, p < .001$) and self-image importance beliefs ($\gamma_{01} = -.08, p < .01$), but they bounced back faster on social importance beliefs ($\gamma_{23} = .006, p < .05$).

Discussion and Implications

It is widely accepted that a healthy self-concept is important for a broad range of outcomes, including academic achievement, social and emotional competence, mental health, and employment outcomes (Eccles et al., 1998; Elksnin & Elksnin, 2006). Although this association applies to children and youth with disabilities as much as it does to those without disabilities, little past research has examined self-concept among the former group.

The current study examined self-concept levels of students with disabilities over time. For self-confidence, patterns similar to those found for the general population were found: high levels at age 8 (mean scores range from 2.22 to 2.57 across domains and waves on a scale of 1 to 3), declines during the remainder of elementary school, and gradual recovery in the secondary school years. The recovered level of self-confidence may help adolescents with disabilities cope with the disruptive effects of academic difficulties, improve their social and emotional skills, and adjust to a new school environment as they transition to middle or junior high school (Elksnin & Elksnin, 2006; Wigfield et al., 1997). Seeing themselves as capable and valuable may help them get through the “confusion and ambiguity” (Burns, 1979), “storm and stress” (Hall, 1904), and “identity crisis” (Erikson, 1959) of adolescence.

We found that the second component of self-concept, importance beliefs, declined with age across all domains. One possible reason for such declines is that as students develop their value of “self,” they gain cognitive and emotional independence from others and decide for themselves what is important and what is not. At the same time, as

students are called on to perform tasks that grow in difficulty over the years and have increasing failures, to protect their self-esteem they may decide that those areas of failure are not important (Wigfield & Eccles, 2002).

Disability Category Differences in Self-Concept

The levels of self-confidence and importance beliefs in different domains appear to be related to the nature of the disability. The level of academic self-concept of students with learning disabilities dropped in ranking from the third highest to eighth highest from age 8 to 17 (Figure 2), and the level of academic importance beliefs dropped from first to eighth from age 8 to 17 (Figure 3), suggesting that their disability in learning and cumulative frustration from school failure may relate to the decrease of academic self-confidence and importance beliefs.

The relatively low levels of self-confidence and importance beliefs of students with autism or emotional disturbance in the social and overall domains are not surprising. One aspect of the definition and diagnosis of autism concerns social deficits, and low levels of social self-concept among these students found by the current study are consistent with previous research (Lind & Bowler, 2009; Toichi et al., 2002). Students with emotional disturbance may have social difficulties because of problems such as conduct disorders, anxiety, or depression. In addition, depression itself may lead to undervaluing social abilities (Koenig, 1988). Furthermore, the relatively lower self-image scores of both of these groups of students may be largely the result of the social aspects items in that domain. For example, self-reflective students with emotional disturbances such as conduct disorders may not agree with items such as “I am easy to like.”

Students with speech impairment had the highest level of self-confidence at age 12.68, and their overall self-confidence increased from early adolescence to late adolescence. Previous research found that the speech impairments of more than half of the students with this classification at early ages resolve as they mature (Marder, 2009). Thus, it is entirely possible that a great deal of the increase in self-confidence levels comes from students who have overcome their disability. The steady increases in self-confidence in social and overall self-confidence for students with visual impairments also may suggest that these students have the hardest time adjusting to school environments in elementary school but their self-confidence improves as they mature and learn adaptive strategies.

Gender and Racial Differences in Self-Concept

The results of this study shed new light on gender and racial differences in the developmental trajectories of self-concept among students with disabilities. Previous studies found that

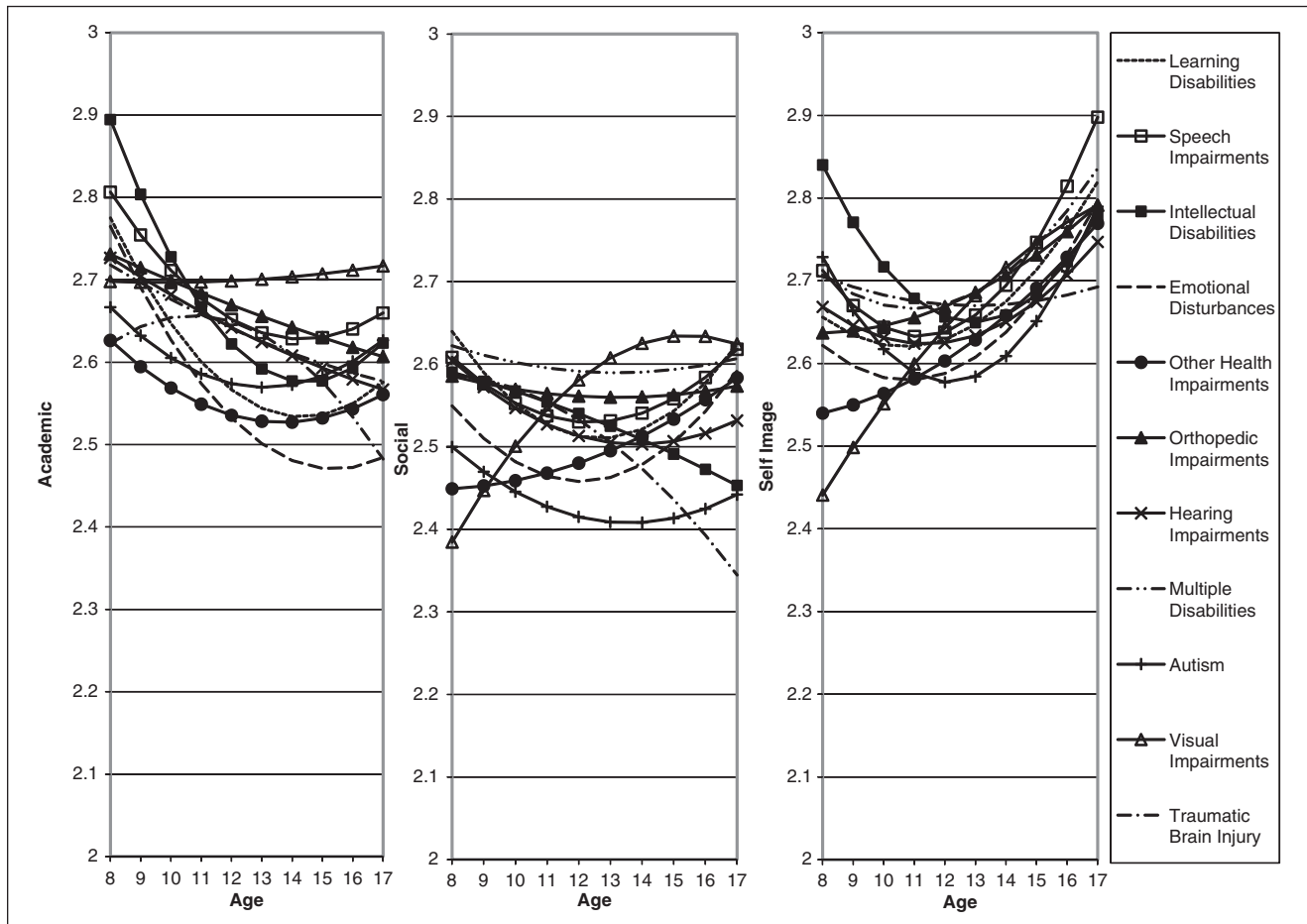


Figure 2. Development of self-confidence by domain and disability category

girls had higher levels of self-confidence than boys in female-dominated fields (Crain, 1996; Eccles et al., 1993; Marsh & Yeung, 1998). Similarly, the current study found significant female advantages in five of six outcome measures (the exception being academic self-confidence) among students with disabilities. The reasons for boys' relative deficits in self-concept as they mature and leave secondary school and ways to change these patterns are important topics for future research.

Despite their overidentification for special education (Losen & Orfield, 2002) and their poor academic performance relative to whites (Wei, Blackorby, & Schiller, in press), the current study found that minority students with disabilities—especially Black students—did not necessarily have lower levels of self-concept than Whites. Our findings agree with the rankings of self-confidence by race posited by Crain (1996) and Twenge and Crocker (2002). Compared to White students with disabilities, we found Black students with disabilities to have higher levels of self-concept in all three domains and in academic importance beliefs and Hispanic or Latino students with disabilities to have lower importance beliefs in the social and self-image domains. The discrepancy

between Black students' performance and self-confidence suggests that earlier findings regarding the negative impact of inflated self-confidence on academic performance (e.g., Hoza & Pelham, 1995) may be correct. The low levels of self-confidence and importance beliefs of Hispanic or Latino students compared to White students may suggest a lack of connection with the mainstream culture.

Practical Implications

There is a great deal of work that can and should be done by schools, districts, states, federal lawmakers, and researchers to help students with disabilities build appropriate self-concept. The diverse patterns of self-concept development suggest that self-concept interventions need to be tailored to the individual student. In some cases, students may benefit from ameliorating their actual areas of deficit, whether academic or social (Manning, 2007). For example, if a student with a low self-concept also has poor reading skills, this approach would involve targeting the reading skills rather than the self-concept directly.

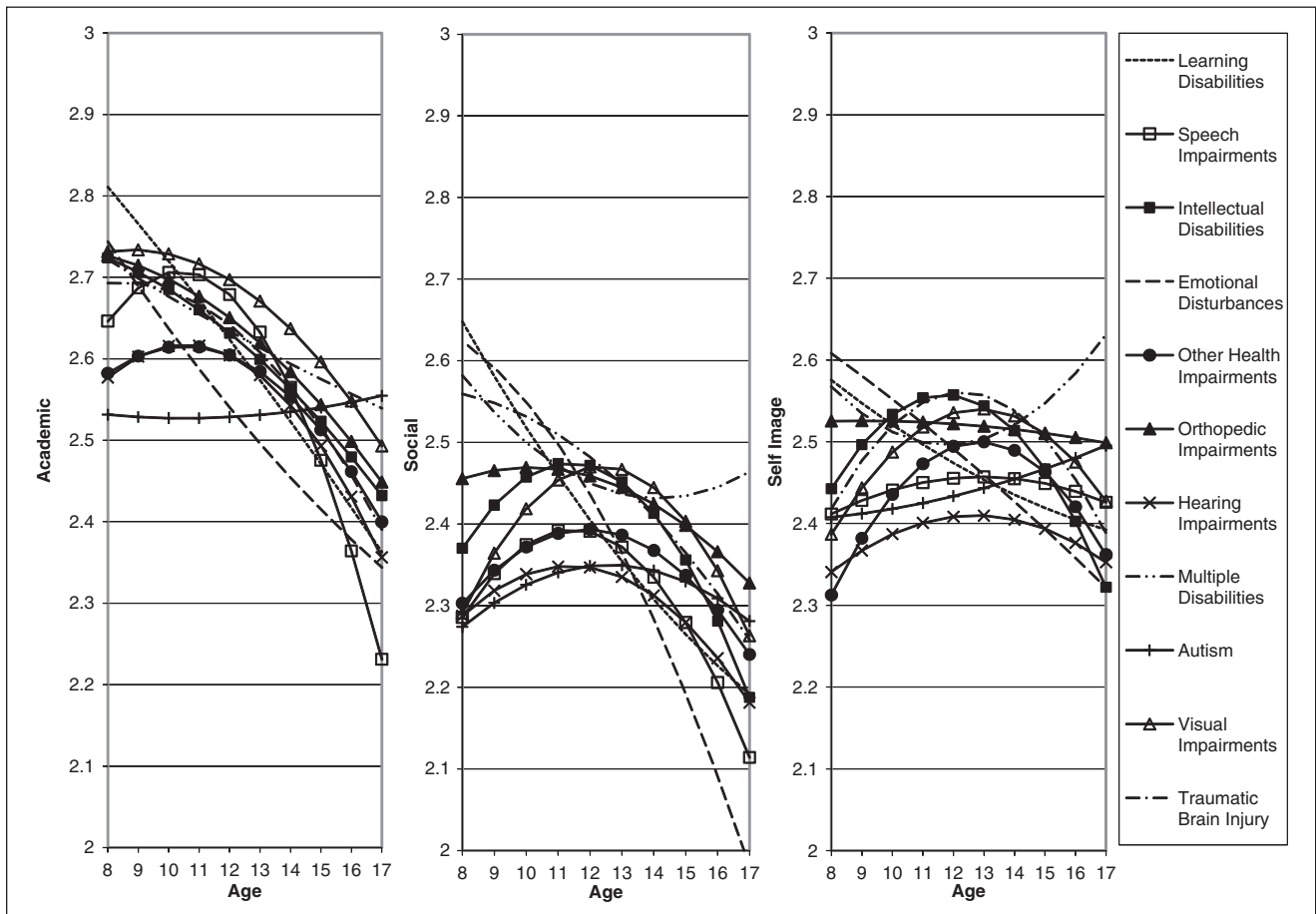


Figure 3. Development of importance beliefs by domain and disability category

In other cases, the student's self-concept is the most appropriate target for interventions. Some students may benefit from counseling interventions. For example, therapeutic techniques, such as rational-emotive therapy and reality therapy, have been found to be very effective in building positive self-concept among students with learning disabilities (Elbaum & Vaughn, 2003). In addition, some practitioners suggest that interventions can take place in the classroom and in family life, as teachers and parents use positive feedback, express acceptance and a nonjudgmental attitude, listen, care, respect, and support the child and reduce social comparison cues to help the child build a positive self-concept (Bergmann, 2000; Manning, 2007). Elksnin and Elksnin (2006) have suggested that teachers can promote students' healthy self-concept by (a) directly teaching skills such as understanding personal values and uniqueness, using self-praise, setting appropriate goals, holding positive attitude toward failures, and reinforcing skill use; (b) helping students identify problems, generate and select solutions, and implement and evaluate the effectiveness; and (c) for adolescents, using a peer-pleasing approach involving positive peer reporting, peer tutoring, cooperative learning, and engagement in

after-school programs. Further research is needed to examine the efficacy and effectiveness of these types of strategies.

Limitations

Although our study provides insights regarding the self-concept development of students with disabilities in K–12 education, this study has several limitations. First, the SEELS data set does not include a sample of students without disabilities for a comparison group. Future longitudinal studies comparing the developmental trend in self-concept between students with different types of disabilities and those without could broaden our understanding of the development of self-concept of all students.

Second, this study provided limited information on treatment strategies for possible inflated self-confidence. Some researchers suggested that unrealistically inflated levels of self-confidence may “reflect distorted social reasoning processes and interfere with students' ability to learn from past experiences or their motivation to change maladaptive behavior” (Hughes, Cavell, & Grossman, 1997, p. 77); therefore, these students unusually show less improvement in academics and behavior intervention programs (Hoza & Pelham, 1995). There

is a debate about what treatment strategies should be used for inflated self-confidence. Some recommended bolstering students' self-confidence (Kuhne, Schachar, & Tannock, 1997); some argued for "humility training," a strategy that helps students adjust the inflated self-confidence to their true competence levels (Gresham, Macmillan, Bocian, Ward, & Forness, 1998). Future research should pay special attention to this problem, perhaps running some experiments to test whether bolstering, "humility training," or teaching self-evaluation skills leads to improved academic achievement and reduced behavior.

Third, we asked students about their self-confidence in academic work in general, and our results may not generalize across different subjects. Subject-specific self-confidence and task value beliefs might not follow the same trends as general self-confidence. Disability categories, race, and gender might relate to the differences of subject-specific self-concept ratings, and this could be a fruitful area for future research.

Conclusion

For students with disabilities, self-confidence in three domains (i.e., academic, social, and self-image) declined in elementary school but rebounded in secondary school. In contrast, importance beliefs declined over the entire period. Students in the 11 disability categories have very different mean levels of self-concept but similar trajectories with age. Educators need to pay special attention to improving the social self-concept and self-image of students with emotional disturbances or autism. The low self-concept of boys also warrants attention by teachers and other practitioners, possibly using one or more of the practices summarized earlier.

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