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IEP/Transition Planning Participation Among Students With the Most Significant Cognitive Disabilities: Findings From NLTS 2012

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Abstract

This study used data from the National Longitudinal Transition Study 2012 (NLTS 2012) to explore the individualized education program (IEP)/transition planning participation and role of students with the most significant cognitive disabilities, compared to students with other disabilities. We viewed students with the most significant cognitive disabilities as those included in three disability categories—*autism, intellectual disability, and multiple disabilities*—who took an alternate assessment. The study also included an analysis of student's participation in relation to their functional, communication, and self-advocacy skills, and student–teacher relationships. Although students with the most significant cognitive disabilities experienced greater limitations overall, students with other disabilities were experiencing similar challenges. Implications for practice were discussed from the lens of student engagement, self-determination, and student's leadership role.

Keywords

transition assessment or planning, transition area, high school, contexts, autism, disability groups, intellectual disability, disability groups, multiple disabilities, disability groups

Active student and parent participation in transition planning has been advocated for more than three decades (Benz & Halpern, 1987; Martin et al., 2004; Test et al., 2009). The evolution of federal special education legislation since the 1975 passage of the Education for All Handicapped Children Act (EHA, P.L. 94-142) has been steadily strengthening the intent that parents be full partners with school staff in educational planning for their children with disabilities and that students with disabilities meaningfully participate in planning their own post-high school transition so that their preferences and goals can guide the planning process (Wagner et al., 2012). Since the initial inception of the EHA in 1975, parent and student participation in individualized education program (IEP)/transition planning meetings has become an important component of federal special education policy with the goal of supporting all students with disabilities in achieving positive postschool outcomes.

The first requirements pertaining to student participation in IEP meetings when transition goals are to be considered were initiated with the 1990 Individuals with Disabilities Education Act (IDEA). The IDEA 1990 required for the first time that transition services be included in IEP planning discussions for students 16 years of age and older. The 1997 amendments to IDEA expanded the transition service requirements of the 1990 Act by lowering the age when students were to be invited to IEP/transition planning meetings from 16 to 14 years. The IDEA was again reauthorized in 2004, with the intent of further strengthening students' transition from school to adult life. However, the IDEA 2004 removed the requirement that IEP teams begin transition planning at age 14. Section 300.320(b) shifted the transition planning to "not later than the first IEP to be in effect when the child is 16 . . ." The IDEA 2004 regulations did not limit a state's interest in continuing to address the transition service needs of the student beginning at age 14 (or earlier), and several states have chosen to retain age 14 as the point at which the state requires transition services to be considered by the IEP team.

Despite significant advances in transition policy and practice, much remains to be accomplished on behalf of

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students with the most significant cognitive disabilities (SCDs) to ensure that these students are fully engaged in the IEP/transition planning process. To date, there has been limited large-scale research focused specifically on these students and their participation in IEP/transition planning meetings. The exception is several studies that used National Longitudinal Transition Study 2 (NLTS2) to investigate the involvement and participation of students with autism and intellectual disability in the IEP/transition planning process (e.g., Barnard-Brak & Fearon, 2012; Griffin et al., 2014; Shogren & Plotner, 2012; Wei et al., 2016). More research is needed to refine our understanding of the transition planning experiences of students with SCDs. The National Longitudinal Transition Study 2012 (NLTS 2012; Lipscomb et al., 2017) provides an opportunity to examine the transition planning participation and role of these students with more recent data.

Students with the most SCDs have received increased attention due in part to federal legislation and research. The term *students with the most SCDs* is included in the Every Student Succeeds Act (ESSA), the 2015 reauthorization of the Elementary and Secondary Education Act (ESEA), to indicate those students who participate in states' alternate assessments based on alternate academic achievement standards (AA-AAAS). The term was not defined in the ESSA. Instead, states were directed to develop a definition and include it in their state guidelines for participation in the AA-AAAS. Assessment regulations (U.S. Department of Education, 2016) indicated that the definition must address "factors related to cognitive functioning and adaptive behavior" (p. 88935). By 2019, 36 states had definitions in their participation guidelines (Thurlow et al., 2019). These definitions all addressed SCDs and poor adaptive skills, and most also noted that the student had pervasive needs across settings and time.

Several studies described the characteristics of students with SCDs (Kearns et al., 2009, 2011; Nash et al., 2016; Thurlow et al., 2016; Towles-Reeves et al., 2012). All of these studies identified students with SCDs by their participation in the AA-AAAS and generated several consistent findings. First, the disability categories most often assigned to the students were autism, intellectual disability, and multiple disabilities, although all recognized that other categories also were represented in much smaller numbers (just as they recognized that not all students in those categories had an SCD). Students were described in terms of their communication characteristics, with approximately 90% of them having symbolic or emerging symbolic communication (which could include use of augmentative or alternative communication) and evidence of receptive language.

The requirement to involve students in discussions of their future goals and plans reflects the values of self-determination and shared responsibility (Johnson, 2012). However, creating these opportunities has historically posed challenges to professionals to change procedures and develop strategies to ensure that students are afforded an active and meaningful role and voice in the planning of their futures (Landmark & Zhang, 2019; Wei et al., 2016). The IDEA 2004 regulations require only that the student is notified of and invited to the IEP/transition planning meeting. The regulations do not require participation, nor is there any clarity or stated expectation about the role students should play during the process. Although it has been documented that students are attending IEP transition planning meetings in greater numbers (Martin et al., 2004; Test et al., 2004), much less is understood about the actual role these students play while in attendance at these meetings.

Overall, studies indicate that students may largely play a passive role during meetings (Hetherington et al., 2010). School staff perceptions provide a source of reporting on student participation, yet their perceptions may be flawed or inaccurate. Direct observation of stakeholder participation during IEP meetings suggests that students spoke at meetings approximately 3% of the time (Martin et al., 2006). Studies have also documented student attendance without participation (Mason et al., 2004). The NLTS2 researchers found, based on teacher reports, that although students with disabilities may be present during IEP/transition planning meetings, they participated little (Cameto et al., 2004). Griffin et al. (2014) suggested that teachers who report student participation in transition planning meetings equate student attendance with student participation.

Students with the most SCDs have been found to have far fewer opportunities to attend and actively participate in IEP/transition planning meetings. Shogren and Plotner (2012) found that students with an intellectual disability or autism had significantly higher levels of no or limited participation compared to student with other disabilities; students with autism were the least likely to attend their meetings. Wagner et al. (2012) documented a similar finding: Students with autism were less likely to attend and participate in IEP/transition planning meetings than students with learning disabilities. Other studies have documented similar findings of lower attendance and participation among students with intellectual and other developmental disabilities (Griffin et al., 2014; McDonnell & Hardman, 2010). Students with the most SCDs experience difficulties in the areas of communication, functional, and social skills, which can make active engagement in meetings more challenging. Supporting students in the development of self-determination skills has been strongly advocated as a means to improve student participation (Shogren et al., 2007). For example, students with autism with higher self-determination and self-advocacy skills are more likely to participate in transition planning meetings than their peers with lower skills (Griffin et al., 2014).

The importance of student engagement in school and learning has been demonstrated in a number of studies (e.g., Christenson et al., 2008; Fredricks et al., 2004). These studies suggest that students are more motivated to perform tasks that they choose for themselves, although there are few studies that include students with disabilities. Shogren and Plotner (2012) did find that when given the opportunity to express a preference for and engage in chosen activities and courses of study, students with disabilities were likely to achieve better outcomes. Whether this is the case for students with the most SCDs is not known.

Research suggests that parent participation in IEP/transition planning meetings and the expectations they hold for their child's abilities, skills, and future educational and employment choices have a powerful influence on the outcomes their child will achieve as an adult (Doren et al., 2012). Parent expectations have been linked to their adolescent's academic achievement (Zhang et al., 2010) and school engagement (Simons-Morton & Chen, 2009). However, meaningful parent participation continues to be more the exception than the rule (Spann et al., 2003). Harry et al. (1995) found that the parents of older students were less likely to attend transition planning meetings. In addition, parents from culturally and linguistically diverse households encountered numerous challenges that limit their participation (Geenen et al., 2003; Landmark et al., 2007; Lo, 2008). Wagner et al. (2012) found that parents with higher levels of involvement in supporting their child's education at home and in school were significantly more likely to attend IEP transition planning meetings. Several forms of parent involvement, including attending meetings, were also predictors of student attendance at meetings and active participation in them.

There has been limited large-scale research on factors that influence the participation of students with the most SCDs in transition planning meetings. The NLTS2 has been the primary source of data used by researchers to examine the transition of students with significant disabilities, but not necessarily those considered likely to have the most SCDs (Cameto et al., 2004; Shogren & Plotner, 2012; Wagner et al., 2012). The NLTS 2012 provides an opportunity to examine the participation of students with the most SCDs in the IEP/transition planning. Our research questions are as follows:

Research Question 1: What are the characteristics of students with the most SCDs represented in the NLTS 2012 data set compared to students with other disabilities?
Research Question 2: Are the IEP/transition planning experiences significantly different for students with the most SCDs compared to students with other disabilities?
Research Question 3: Are there significant difference in the functional, expressive and receptive communication, self-advocacy skills, and student–teacher relationships associated with the IEP/transition planning participation of students with the most SCDs compared to student with other disabilities?

Method

NLTS 2012

The NLTS 2012 is the third in a series of NLTS studies intended to examine students with disabilities receiving services under the IDEA. The NLTS studies have all used survey and administrative data to describe the backgrounds of students with IEPs and their functional abilities, activities in school and with friends, academic supports received from school and parents, and preparation for life after school. The NLTS 2012 focused on students with and without IEPs who were 13 to 21 years of age during the 2011–2013 school years. The focus of the present study is specifically on the sample of special education students with the most SCDs (i.e., autism, intellectual disability, and multiple disabilities) who took an alternate assessment.

The NLTS 2012 sampling process was designed to allow the results to generalize to the full population of students receiving special education services in the United States. A two-stage national probability sample was established to produce precise, nationally representative estimates of the backgrounds and experiences of these special education students (Burghardt et al., 2017). The first stage consisted of selecting a stratified national probability sample of districts and recruiting those districts to participate. Districts included local education agencies, charter schools that operate independently, and state-sponsored special schools that serve deaf and/or blind students. The second stage consisted of selecting a stratified sample of students from each of the districts that agreed to participate. The two-stage sampling design resulted in an overall sample of students with and without disabilities of 21,959 students, of which 17,476 were students with IEPs in 432 participating districts. The sample of districts was stratified to represent different geographic regions, district sizes, and other factors.

Data collection included a student and parent survey designed to gather a comprehensive range of information on student and parent characteristics, school experiences, and future goals. The parent and youth survey instruments used items from prior NLTS and NLTS2 surveys as well as new items developed through a review of the literature and in consultation with a technical working group of experts (Burghardt et al., 2017). The study was conducted from February to October 2012 and from January to August 2013. Survey administration in 2012 was by computer-assisted telephone interviewing. In 2013, the study introduced a web option and field interviews. A total of 10,459 parent surveys of students on IEPs were completed, representing a 60% unweighted response rate. Across the 2 years

of data collection, 8,960 surveys of students with IEPs were completed, representing a 51% response rate. Students were between 12 and 22 years of age when the interviews took place. Less than 2% were 12 years old, and less than 1% were 22 years of age. All students were enrolled in Grades 7 to 12 or in a secondary ungraded class at the time of the sampling.

Sample

Sampling weights were used in the analysis because we were interested in producing nationally representative findings for a subsample of students from the NLTS 2012 data set. Inferential analyses using the sampling weights, although thoroughly considered, were not deemed feasible due to high levels of missing data (limiting the number of complete cases for students with the most SCDs). Because the focus of this study was specifically on student participation in the IEP/transition planning, we included students 14 to 22 years old who were most likely to be involved in planning meetings. Several states have retained age 14 as the point at which student's participation in the IEP/transition planning is to occur. Based on our analyses of the NLTS 2012, approximately 40% of enrolled students with IEPs who were invited and attended transition planning meetings were 14 to 15 years of age.

We included a subsample of students in three disability categories (autism, intellectual disability, and multiple disabilities) who took an alternate assessment within 12 months of being surveyed. These are students most inclusive of those with the most SCDs. Although students in other disability categories (e.g., specific learning disability, other health impaired) may have taken an alternate assessment, their numbers were small in comparison with our sample of interest. Students with autism, intellectual disability, and multiple disabilities often require the most extensive supports among disability categories under the IDEA. Because of the extensive support needs that these three groups of students share, researchers have combined the three disability categories and viewed them as a single group of students with severe disabilities (Carter et al., 2011, 2012).

Students with IEPs who were in all other IDEA disability categories who did not take an alternate assessment were included in the study for comparison purposes. The overall sample included 1,480 enrolled students with the most SCDs who took an alternate assessment (autism: $n = 450$; weighted % = 29.4%; intellectual disability: $n = 610$, weighted % = 56.6%; and multiple disabilities: $n = 420$, weighted % = 14.0%) and 3,610 enrolled students with other disabilities who did not take an alternate assessment. The unweighted sample size reported in this study was rounded to the nearest 10 because of the IES reporting requirement for restricted data sets. In total, data were available for 214,983 weighted enrolled students with the most SCDs and 937,465 weighted students with other disabilities who did not take an alternate assessment.

Demographic information for students with SCDs and students with other disabilities is shown in Table 1. The majority of students for both groups were male, ages 14 to 16 years, non-Black, with more than half participating in free/reduced or free and reduced-price lunch programs. More than one fourth of the students were living in a household with an income of US$20K or less, and more than half of the parents had a high school diploma or general educational development (GED) or did not complete high school.

Measures

IEP/transition meeting participation. Measures of interest focused on IEP/transition planning meetings and whether the student (a) was invited to the IEP/transition planning meeting (parent survey), (b) attended the meeting (student survey), and (c) met with school staff to set goals for a transition plan (student survey). These responses from the student survey were coded 1 = yes and 0 = no.

IEP/transition planning role and contribution. The student's perception of their role in the IEP/transition planning meeting (student survey) and extent of the student's contribution (parent survey) were used in this analysis. Responses to the student's perception of his or her role in the meeting were as follows: 1 = *did not participate*, 2 = *participated very little or not at all*, 3 = *provided some input*, 4 = *took a leadership role*, and 5 = *doesn't know about any goals.* These were recoded to reduce the total number of responses to three responses for our analysis: 1 = *participated very little or not all* (original codes 1 and 2), 2 = *provided some input* (original code 3), and 3 = *took a leadership role* (original code 4). Responses of code 5 were treated as missing for this measure. Only those students who responded to the item were included in analyses.

The parent survey item for *student's contribution in coming up with transition goals*—1 = *mostly school*, 2 = *mostly respondent or other adult*, 3 = *mostly student*, 4 = *school and student equally*, 5 = *school and respondent or other adult equally*, 6 = *student and respondent or other adult equally*, and 7 = *school, respondent, or other adult, and student equally*—was recoded to reduce the number of response options to three responses for our analysis: 1 = *mostly student* (original code 3), 2 = *some contribution by student* (combination of original codes 4, 6, and 7), *and* 3 = *little contribution by student* (combination of original codes 1, 2, and 5).

Survey response items for role and contribution were recoded into binary variables. For the student's perception of their role in the IEP/transition planning meeting, the two codes were "passive role" = *participated very little or not all* and "active role" = *combination of provided some input*

Table 1. Student and Family Characteristics.

	Students with the most significant cognitive disabilities			Students with other disabilities		
Characteristics	Unweighted count[a]	Weighted %	*SE*	Unweighted count[a]	Weighted %	*SE*
Total IEP	1,480			3,610		
Gender						
Male	960	65.6	1.6	2,380	67.3	1.4
Female	510	34.4	1.6	1,220	32.7	1.4
Age						
14	280	20.3	1.4	870	27.2	1.3
15	320	22.8	1.4	790	25.1	1.3
16	280	19.9	1.4	770	24.8	1.2
17	240	14.9	1.2	630	14.4	0.8
18	180	10.7	1.0	310	5.7	0.6
19–22	190	11.4	1.1	240	3.0	0.3
Race						
Non-Black	1,030	70.0	2.5	2,300	65.8	2.4
Any Black	300	21.9	2.2	790	22.3	1.8
Multi/Other	30	2.2	0.5	90	2.5	0.6
Hispanic	90	6.0	1.3	280	9.4	1.6
Free/reduced-price lunch						
No	560	44.6	2.3	1,300	41.7	2.2
Free	450	37.7	2.6	1,090	41.9	2.7
Reduced	60	5.6	0.8	160	5.0	0.8
Free and reduced	140	12.1	2.1	350	11.4	2.2
Household income						
US$20,000 or less	370	26.9	1.8	940	28.5	1.4
US$20,001 to US$40,000	350	25.7	1.7	860	27.3	1.4
US$40,001 to US$60,000	210	16.4	1.4	500	14.8	1.0
Over US$60,000	450	31.0	2.0	1,000	29.4	1.9
Highest parent education						
Less than high school	140	9.8	1.1	590	16.6	1.3
HS diploma or GED	560	41.8	2.0	1,260	37.1	1.6
Tech/trade school degree	80	5.7	0.9	190	4.8	0.6
2- to 4-year college degree	490	31.4	1.6	1,120	32.5	1.5
Graduate degree	180	11.2	1.2	370	9.0	0.9

Source. U.S. Department of Education, National Center for Education Statistics, National Longitudinal Transition Study 2012 (NLTS 2012).
Note. The missing data ranged from 0% to 18.2% for students with significant cognitive disabilities and from 0% to 19.7% for students with other disabilities across measures. IEP = individualized education program; HS = high school; GED = general educational development.
[a]Unweighted sample sizes weighted to nearest 10.

and *took a leadership role*. For the student's contribution, the two codes were "little contribution" = *little contribution by student* and "at least some contribution" = combination of *mostly student* and *some contribution by student*.

Student functional, communication, and self-advocacy skills and student–teacher relationships. Five measures were included in this study: functional skills, receptive communication skills, expressive communication skills, self-advocacy, and student–teacher relationships.

Functional skills. Using a 4-point scale (1 = *not at all well* to 4 = *very well*), parents rated their child's ability to dress completely, feed herself or himself completely, read and understand common signs, count change, look up phone numbers/use a phone, use an ATM, make appointments, get to places outside the home. Several additional functional skills were rated on a different 4-point scale (1 = *always* to 4 = *never*): fixes his or her own breakfast or lunch, does laundry, straightens up (his or her) own room, and buys a few things at the store. Cronbach's alpha equaled .94. Items were summed and scores categorized as *low, medium*, and *high* to recognize the distribution of scores around the median. Scores of 1 to 16 were considered *low*, 17 to 32 were considered *medium*, and 32 to 48 were considered *high*.

Expressive and receptive communication. Parents rated their child's ability to carry on a conversation and to understand others. Expressive communication was rated on a 4-point scale (1 = *no trouble carrying on a conversation* to 4 = *doesn't carry on a conversation*). Receptive communication was rated on a 4-point scale (1 = *no trouble understanding what others say* to 4 = *doesn't understand at all*). Another 3-point scale was created by combining codes 3 and 4 to conduct a chi-square analysis. This was necessary because the number of students with response 4 was too small to include in the analysis as a separate measure.

Self-advocacy. Using a 2-point scale (1 = *positive*, 0 = *negative*), the student reported on self-advocacy behaviors (e.g., level of effort/trying hard at school, making and keeping friends, making good/important choices for oneself, communicating one's own preferences, being confident in one's abilities). One item set (choice activities) and one item (*I am loved because I give love*) were dropped from inclusion in our analyses. Cronbach's alpha for the included items was .68. A total of 13 survey items were summed and scores categorized as low, medium, and high to recognize the distribution of scores around the median. Scores of 0 to 10 were considered low, 11 to 12 were considered medium, and 13 were considered high.

Student–teacher relationship. Using a 2-point scale (1 = *agree*, 0 = *disagree*), students self-reported their relationship with their teachers using six survey items: caring about student, complementing student's performance, noticing student's existence, encouraging student to do this/her best, listening to student, and providing positive expectations. Cronbach's alpha was .80. Items were summed and scores categorized as *low, medium*, and *high* to recognize the distribution of scores around the median. Scores of 0 to 2 were considered low, 3 to 4 were considered medium, and 5 to 6 were considered high.

Data Analysis

We used descriptive statistics to depict characteristics of the study sample and to examine measures of students' IEP/transition planning meeting experiences and to describe students' functional, communication, and self-advocacy skills and student–teacher relationships. To examine whether significant differences occurred between students with the most SCDs and students with other disabilities in relation to their IEP/transition planning experiences (invitation, attendance, meeting with school staff to develop goals, and perceptions of the student's role and contribution in the meeting), and whether there were significant differences between the two groups in relation to the student's functional, communication, and self-advocacy skills, and student–teacher relationships, chi-square tests of homogeneity were conducted. Chi-square analyses were also conducted to explore the relationship between IEP/transition planning meeting experiences and student's functional, communication, and self-advocacy skills and student–teacher relationships for students with the most SCDs and students with others disabilities independently. We also conducted post hoc tests when the chi-square tests were significant. Statistically significant differences were set at a probability of .05. Both descriptive and chi-square analyses used stratum and primary sampling unit variables provided with the restricted data set.

Missing data. The NLTS 2012 survey design allowed participants to skip some items based on their responses to previous items. Thus, no data imputation was performed for missing data, which ranged from 13.8% to 66.4% for students with the most SCDs and 17.8% to 61.0% for students with other disabilities across measures of the IEP/transition planning meeting experience. For the functional, communication, and self-advocacy skills, and student–teacher relationships, the missing data ranged from 0% to 46.8% for students with the most SCDs and 0.1% to 30.1% for students with other disabilities. Missing rates are noted in the footnotes for each data table.

Results

IEP/Transition Planning Meeting Experiences

Table 2 shows the five IEP/transition planning meeting measures examined in this study—invitation, attendance, met with school staff to develop a transition plan, student's perceptions of their role, and parent's perceptions of the student's contribution to the meeting. We found that 87.2% of students with the most SCDs were invited to attend the IEP/transition planning meeting, with 75.0% of them attended the meeting, and 63.5% reporting meeting with school staff to develop a transition plan. For students with other disabilities, 91.2% were invited to the meeting, 67.4% attended the meeting, and 64.4% met with school staff to develop goals. More than one third (39.8%) of students with the most SCDs participated a little or not at all during the IEP/transition planning meeting compared with 29.6% of students with other disabilities. Greater differences were noted in the contribution students made during the meeting, with 27.2% of students with the most SCDs compared with 40.5% of students with other disabilities reporting a contribution of *some contribution* to *mostly youth*.

Chi-square analyses indicated that compared to students with other disabilities, students with the most SCDs were significantly less likely to be invited to the IEP/transition planning meeting, $\chi^2(1, N = 1{,}850) = 4.71$, $p < .05$, and significantly more likely to attend the IEP/transition planning meeting, $\chi^2(1, N = 4{,}240) = 13.62$, $p < .001$.

Table 2. Student's IEP/Transition Planning Experiences.

Characteristics	Students with the most significant cognitive disabilities			Students with other disabilities			
	Unweighted count[a]	Weighted %	*SE*	Unweighted count[a]	Weighted %	*SE*	χ^2
Student attendance							
Youth was invited to an IEP/transition planning meeting	690	87.2	1.5	1,250	91.2	1.2	4.71*
Youth attended IEP/transition planning meeting	950	75.0	1.6	2,030	67.4	1.5	13.62***
Youth met with school staff to set goals	500	63.5	2.3	1,110	64.4	1.8	0.10
Student involvement							
Youth's role in the meeting							9.68**
Participated little or not at all	200	39.8	2.7	470	29.6	1.8	9.12**
Provided some input	210	40.7	2.5	670	45.1	1.9	1.99
Took leadership	90	19.5	2.1	370	25.2	1.7	4.53*
Youth's contribution during the meeting							29.64***
A little	780	72.8	1.7	1,310	59.5	1.9	21.91***
Some	270	23.8	1.7	610	30.6	1.6	7.90***
Mostly youth	30	3.4	0.9	200	9.9	1.1	23.28***

Source. U.S. Department of Education, National Center for Education Statistics, National Longitudinal Transition Study 2012 (NLTS 2012).
Note. The missing data ranged from 13.8% to 66.4% for students with significant cognitive disabilities and from 17.8% to 61.0% for students with other disabilities across measures. IEP = individualized education program.
[a]Unweighted sample sizes weighted to nearest 10.
*$p < .05$. **$p < .01$. ***$p < .001$.

Chi-square tests also found that student groups (SCDs vs. students with other disabilities) were significantly associated with student's role, $\chi^2(2, N = 2{,}010) = 9.68, p < .01$, and contribution in the IEP/transition planning meeting, $\chi^2(2, N = 2{,}700) = 29.64, p < .001$. Overall, students with the most SCDs held a more limited role and contributed less than students with other disabilities. Post hoc tests showed that compared to students with other disabilities, students with the most SCDs were significantly more likely to report their role in the meeting as participating a little or not at all, $\chi^2(1, N = 2{,}010) = 9.12, p < .01$, and less likely to report taking a leadership role, $\chi^2(1, N = 2{,}010) = 4.53, p < .05$.

Functional, Communication, Self-Advocacy Skills, and Student–Teacher Relationships

Table 3 reports findings on the functional, communication, self-advocacy skills, and student–teacher relationships. Chi-square results showed that there was a significant relationship between student group and functional skills, $\chi^2(2, N = 4{,}300) = 7.95, p < .05$; how well the youth carries on conversations, $\chi^2(2, N = 3{,}780) = 311.53, p < .001$; how well youth understands what is said to him or her, $\chi^2(2, N = 3{,}820) = 233.47, p < .001$; and self-advocacy skills, $\chi^2(2, N = 3{,}310) = 21.61, p < .001$, with these being higher for students with other disabilities compared to students with the most SCDs. Student–teacher relationships did not differ significantly for the two groups.

Post hoc tests to examine the relationship between the levels of students' functional, communication, and self-advocacy skills, and student–teacher relationships and their IEP/transition planning meeting experiences. These analyses showed many significant associations (see Table 4), although more for students with other disabilities compared to students with the most SCDs. Significant associations were noted between students with the most SCDs and students with other disabilities in terms of their expressive and receptive communication and self-advocacy skills when meeting with school staff to set goals and the role they played in meetings. Overall, students with other disabilities had higher-level skills which related to a higher level of involvement in the IEP/transition planning meeting.

Discussion

This study examined the extent to which students with the most SCDs compare to students with other disabilities in relation to their participation or involvement in IEP/transition planning meetings. This study also included an analysis of student's functional, communication, and self-advocacy skills, skills that have been well documented to influence a student's capacity to actively participate and contribute during meetings (Carter et al., 2014; Griffin et al., 2014; Wagner et al., 2012; Wei et al., 2016). A measure of student–teacher relationships was also included to determine

Table 3. Functional, Communication, and Self-Advocacy Skills, and Student–Teacher Relationship.

Characteristics	Students with the most significant cognitive disabilities			Students with other disabilities			
	Unweighted count[a]	Weighted %	*SE*	Unweighted count[a]	Weighted %	*SE*	χ^2
Functional skills							7.95*
Low	490	31.4	1.7	1,240	33.2	1.4	0.67
Medium	840	57.6	1.7	1,990	59.2	1.5	0.51
High	160	11.0	1.0	380	7.6	0.7	7.90**
How well youth carries on conversation							311.53***
No trouble understanding	360	29.3	1.7	2,110	75.5	1.3	285.11***
Little trouble understanding	550	43.9	1.8	670	19.0	1.1	106.05***
Lot of trouble understanding	280	19.0	1.3	210	3.5	0.4	120.09***
Does not understand at all	130	7.8	0.8	150	2.0	0.3	44.83***
How well youth understands what is said to him or her							233.47***
No trouble understanding	380	27.7	1.7	1,950	66.7	1.5	230.39***
Little trouble understanding	730	56.0	1.8	990	29.4	1.4	128.07***
Lot of trouble understanding	210	15.7	1.3	200	3.4	0.4	67.37***
Does not understand at all	10	0.6	0.2	30	0.5	0.2	
Self-advocacy							21.61***
Low	150	19.1	1.6	340	12.0	1.0	13.21***
Medium	290	37.1	2.0	880	33.2	1.5	2.36
High	350	43.8	2.1	1,300	54.7	1.5	17.46***
Teacher–student relationship							
Low	40	3.5	0.7	100	3.6	0.5	<.01
Medium	90	7.6	0.9	230	8.4	0.9	0.43
High	1,160	88.8	1.1	2,660	88.0	1.0	0.32

Source. U.S. Department of Education, National Center for Education Statistics, National Longitudinal Transition Study 2012 (NLTS 2012).
Note. The missing data ranged from 0% to 46.8% for students with significant cognitive disabilities and from 0.1% to 30.1% for students with other disabilities across measures.
[a]Unweighted sample sizes weighted to nearest 10.
*$p < .05$.**$p < .01$. ***$p < .001$.

whether differences exist between students with the most SCDs and students with other disabilities. Teacher–student relationships have been documented to promote student engagement essential in promoting active participation in academic and related settings (Jordan et al., 2010).

When examining student participation in the IEP/transition planning process, we found differences in the participation rates of students with the most SCDs compared to students with other disabilities. Overall, the majority of students in both groups reported being invited to the IEP/transition planning meeting. It appears that the IDEA 2004 requirement that students be notified and invited to transition planning meetings by age 16, or younger if appropriate, is generally being followed. Continued professional efforts are needed to ensure that all students with a disability are notified and invited to meetings. However, challenges were reported for students in both groups in meeting with school staff to set transition goals, setting goals during the meeting, and contributing during these meetings. Although students with the most SCDs experienced greater limitations, students with other disabilities were experiencing similar challenges.

Of concern was the limited extent to which students with the most SCDs played a role during the transition planning meeting (39.8% reported participating a little or not at all). Furthermore, few students with the most SCDs were provided an opportunity to take a leadership role (19.5%) and 3.4% of the transition goals developed during the meeting were done so mostly by these students. Other studies have found similar findings (Martin et al., 2006; Shogren & Plotner, 2012). Students with other disabilities fared somewhat better in relation to their role and contribution during meetings. However, there needs to be concern for these students as well. Martin et al. (2004) commented that "it is naïve to presume that youth attending their IEP/transition planning meeting will learn how to actively participate and lead the process through serendipity—yet this is precisely what current practice tends to expect" (p. 4).

Table 4. Chi-Square Analysis Between Student Skills and IEP/Transition Planning Experiences.

		Student attendance			Student involvement	
Group	Student skills	Being invited	Attended	Met with school staff to set goals	Role	Contribution
Students with the most significant cognitive disabilities	Functional skills					*
	How well youth carries on conversation			**		**
	How well youth understands what is said to him/her					
	Self-advocacy			*		
	Teacher–student relationship			*		
Students with other disabilities	Functional skills					*
	How well youth carries on conversation	*		**	**	***
	How well youth understands what is said to him/her	*				***
	Self-advocacy			*	***	
	Teacher–student relationship		*			

Source. U.S. Department of Education, National Center for Education Statistics, National Longitudinal Transition Study 2012 (NLTS 2012).
Note. IEP = individualized education program.
*$p < .05$. **$p < .01$. ***$p < .001$.

The relationship between students' IEP/transition planning participation and the role and contribution they make during this process is also influenced by a student's functional, communication, and self-advocacy skills (Barnard-Brak & Fearon, 2012; Griffin et al., 2014; Hetherington et al., 2010; Wei et al., 2016). As would be expected, students with other disabilities reported a higher level of functional, communication, and self-advocacy skills than did students with the most SCDs. For students with the most SCDs, expressive communication (how well youth carries on a conversation) was the area of greatest difference. Self-advocacy skills were also significantly associated with student's role and contribution during the meeting. We also found that for both groups of students, higher levels of student–teacher relationships have some influence on participation. However, very limited research has been conducted, to date, on the influence of teacher interactions with students with disabilities in relation to student's participation, role, and contribution in IEP/transition planning meetings.

Barnard-Brak and Fearon's (2012) analysis of the NLTS2 found that how well the student is reported to communicate significantly predicted student IEP participation among adolescents with and without autism, with adolescents with autism having less communication skills than students with other disabilities. Self-advocacy skills were also found to significantly influence the student's participation, role, and contribution. Self-advocacy skills have been acknowledged as a key component to achieving self-determination among students with disabilities, which has been associated with positive transition planning experiences (Martin et al., 2004; Shogren & Plotner, 2012). Test et al. (2005) found that all of the 20 data-based intervention studies they reviewed included communication skill development as a means to promote self-advocacy. This included various subcomponents of communication, such as negotiation, persuasion, compromise, and language and listening skills. It is clear that the functional, communication, and self-advocacy skills of students with SCDs does influence their participation and the role and contribution they make during IEP/transition planning meetings. Further research is needed to examine which of these and other factors enhance or inhibit participation.

Implications for Practice

For a period spanning more than 35 years, a unifying body of research has evolved suggesting strategies and interventions specifically focused on the participation, role, and contribution of students with disabilities, including students with the most SCDs in the IEP/transition planning process. Student participation has been examined through the lens of student engagement and self-determination. Research also has focused on the importance of the student's leadership role in setting transition goals. We identify implications for each of these topics for students with the most SCDs.

Student engagement. Effective approaches to involving students in IEP/transition planning meetings must include more than their mere attendance and presumption of the role they should play in the process. The student's commitment to the process, perception of social competence, and school belonging also must be considered (Christenson et al., 2008). Research indicates that students are more likely to participate in a planning process when they feel that they belong and have a connection to that process (Wehmeyer & Shogren, 2008), although whether this

applies to students with the most SCDs has not been studied.

As is the case for all instruction for students with the most SCDs, it is recommended that competence in these students be assumed (Donnellan, 1984), which means that educators proceed with teaching them elements of student engagement. These include participation and involvement in all school activities, such as responding to basic requirements (e.g., attending school, paying attention to teachers, and completing assignments; Finn, 1989). For participation in IEP/transition planning meetings by students with the most SCDs, participation should lead to enhanced role development, promoting feelings of identification and belonging in the process, which in turn promotes ongoing productive participation. The fact that data on attendance in the IEP transition planning meeting were available only for those able to respond highlights the importance of engagement in the meeting because it is likely that only the higher functioning students with SCDs responded to the attendance item.

By helping to set goals and map out their futures, students with the most SCDs should be more likely to achieve those goals, as has been found for other students with disabilities (Martin et al., 2007; Shogren et al., 2007). Raising professional expectations for the participation of these students and adapting interventions developed for students without disability, at risk, or with mild disability is a first step (Hollingshead et al., 2017). Universal Design for Learning (UDL) is one strategy that has been broadly advocated for as a means of providing sufficiently flexible curriculum and instructional strategies so that *all* students can find the right balance of support needed to thrive (Hollingshead et al., 2017; Meyer et al., 2014). School wide, universally designed programs targeting school climate, student engagement, and the development of positive behaviors are also likely to produce positive effects on attendance, participation, and behavior, as has been shown for students with disabilities in general (Sinclair et al., 2005; Sugai et al., 2000).

Self-advocacy and self-determination. The positive relationship between students' IEP/transition planning participation and self-advocacy and self-determination skills has been investigated by numerous researchers (Shogren & Plotner, 2012; Shogren et al., 2007). Studies have included students with autism and other intellectual and developmental disabilities (Barnard-Brak & Fearon, 2012; Wehmeyer & Schwartz, 1997), but not necessarily those with the most SCDs. Still, the four central characteristics (personal autonomy in one's actions, behaviors that are self-regulated, responding to events in an empowered manner, and acting in a self-realized manner; Wehmeyer et al., 2007; Williams-Diehm et al., 2008) and specific skills (e.g., decision making, choice making skills, problem solving, goal setting, self-advocacy, self-efficacy, outcome expectancy, self-awareness, and self-knowledge; Shogren et al., 2007) are relevant for these student.

Direct instruction is the means by which students learn these skills. Several instructional programs are available, including *Whose Future Is It Anyway?* (Wehmeyer & Lawrence, 1995), *Take Charge for the Future* (Powers et al., 2001), *Self-Directed IEP* (Martin et al., 1996), and *Student Directed Transition Planning* (Woods et al., 2010). In addition, person-centered planning approaches that involve students, teachers, parents, and friends have proven to produce positive results in supporting students with intellectual and developmental disabilities in participating in the IEP/transition planning process (Flannery et al., 2000; Hagner et al., 2014). Because curricula like these require dedicated instructional time, which may compete with other academic and related curricular content, Wehmeyer et al. (2012) developed the *Self-Determined Learning Model of Instruction* (SDLMI). Rather than teaching specific transition planning and self-determination skills, it is used by educators to shape their instruction to be student directed rather than teacher directed by supporting students to self-regulate problem solving leading to goal setting and attainment in any content area, including planning for the transition to employment (Shogren et al., 2018). The importance of the SDLMI is that it can be used by teachers with students with a range of support needs, including students with the most SCDs (Shogren et al., 2019) by individualizing the supports based on students' communication and comprehension skills. Researchers have established the casual impact of the SDLMI on transition goal attainment by students with an intellectual disability (Shogren et al., 2012).

Leadership development. Our findings of the limited role of students with the most SCDs in setting goals and assuming a leadership role during the IEP/transition planning process are congruent with the findings of other studies (Landmark & Zhang, 2019; Martin et al., 2006; Shogren & Plotner, 2012). Limited research has been conducted on the skills associated with leadership and the methods by which students learn these skills and demonstrate how to take on a leadership role in transition planning meetings (Test et al., 2005), although students with disabilities learn the skills necessary to be effectively involved in their IEP/transition planning meetings when they are taught effective leadership skills, are provided the opportunity to participate, and when adult IEP team members expect student participation (Martin et al., 2006). Some of the curricula mentioned earlier support student leadership development in students with disabilities (e.g., Martin et al., 1996; Wehmeyer & Lawrence, 1995; Woods et al., 2010). Further work is clearly needed to shift the transition planning

process from teacher-led to student-led approaches (Shogren & Plotner, 2012) and to explore the nature of instruction and the role of educators and parents in developing leadership skills in students with the most SCDs.

Implications for Research

These findings provide a unique contribution to understanding the participation of students with the most SCDs in IEP/transition planning. Future studies using the NLTS 2012 data should explore methods that examine predictors of meeting participation for this group of students. As we noted, the data set contained a significant amount of missing data. Over the past 20 years, there has been extensive development of statistical methods and software for analyzing data with missing values (Hughes et al., 2019). These additional methods would allow for a more in-depth examination of key student and family characteristics and factors that are associated with student's participation, role, and contribution during IEP/transition planning meetings. Findings in this study illustrate that students with the most SCDs compared to students with other disabilities experienced greater limitations in meeting with school staff to set transition goals, setting goals during meetings, and contributing during these meetings. Conducting an exploration as to the ramifications of race/ethnicity and socioeconomic status on student's participation, role, and contribution is also highly warranted (see Trainor et al., 2016; Wagner et al., 2012).

The NLTS 2012 contains many additional variables of interest, such as parent and student expectations in the areas of postsecondary education, employment, independent living, and economic self-sufficiency following high school completion. Questions need to be answered as to what impact student's role and contribution during IEP/transition planning meetings plays in influencing decisions regarding these goals. The implications for practice section highlighted additional areas for further research on interventions and strategies focused on developing student's functional, communication, and self-advocacy skills and enhancing teacher–student relationships. Numerous evidence-based interventions and practices have been well developed and researched (e.g., Test et al., 2009), but further research is needed to demonstrate their efficacy for students with the most SCDs.

Limitations

The NLTS 2012 provides a nationally representative sample of students with disabilities and their parents regarding the status of transition planning across the nation. There are, however, several limitations that need to be considered when interpreting the data in this study. First, this is a descriptive study examining only the status of students with the most SCDs compared to students with other disabilities. Second, we were limited by the types of questions addressed within the student and parent surveys. The NLTS 2012 is a broadly focused examination of the status of students with disabilities; consequently, an area of focus such as students' IEP/transition planning meeting participation, role, and contribution was limited to a relatively few survey items. Furthermore, we examined a limited number of student skills (functional, communication, and self-advocacy skills) that have been well documented to influence students' ability to participate in IEP/transition planning meetings. Other studies (Griffen et al., 2014; Shogren & Plotner, 2012; Trainor et al., 2016) have examined other parent, school, and individual factors that are associated with students' transition planning experience. Finally, the missing rate for some variables was high. This limited some of the analyses that could be conducted, including analyses that would permit the examination of predictors of transition planning participation. It also means that some of the results should be interpreted with caution.

Conclusion

The intended requirements of the federal special education legislation call for students with disabilities, including those with the most SCDs to fully participate in the IEP/transition planning meeting process as a means to ensure their preferences and goals for the future are fully addressed. The findings of this study are, in many ways, consistent with those found in earlier studies examining the IEP/transition planning experiences of students with disabilities. The NLTS 2012 represents the most recent data available and illustrates the limited progress made to date in ensuring that students with the most SCDs and students with other disabilities play in relation to their role, contribution, and leadership during these meetings. The discussion outlined student engagement, self-advocacy/self-determination, and leadership development as critical components leading to improved student levels of participation. Numerous interventions have been developed and tested demonstrating the capacity of these young people to participate; however, broad-based implementation is lacking. Further research on the efficacy of these interventions is warranted and on the strategies necessary to fully implement them within secondary education settings is needed.

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