



# Multi-informant Assessment of Transition-Related Skills and Skill Importance in Adolescents with Autism Spectrum Disorder



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## Background

The Center on Secondary Education for Students with Autism Spectrum Disorder (CSESA) is a 5-year research and development project that focuses on developing, adapting, and studying a comprehensive school- and community-based education program for high school students on the autism spectrum.

- Post-high school outcomes are particularly bleak for students with autism spectrum disorder (ASD). One malleable contributor to post-school outcomes is the quality of the transition plans developed as part of the Individualized Education Plan (IEP).
- The **Secondary School Success Checklist (SSSC)** is a new measure developed to allow students across the spectrum to describe their current skill level in transition-related domains as well as rank their priorities for goal setting, thus actively contributing to the transition planning process.
- The SSSC is designed to collect data from the perspective of multiple informants including the student, their parents, and the student's teacher.

## Objectives

The present study aimed to understand the transition-related skills and learning priorities of adolescents with ASD from the perspectives of three key informants: adolescents with ASD, their parents, and teachers. The study assessed the skills and priorities of a large US sample using a new measure, the SSSC.

This study examines: (a) the transition-related skill level of adolescents with ASD as reported by each respondent group, (b) the perceived importance of each skill across respondent group, and (c) the differences in skill level as rated by informant group

## Participants

- Data were drawn from a larger ongoing RCT of high school students with ASD. The sample includes 547 adolescents and their parents from 3 states.

Tables 1 & 2. Demographic and descriptive information about adolescents and their caregivers

	n	%		n	%
<b>Gender</b>			<b>Primary Caregiver</b>		
Male	464	86	<b>Education</b>		
Female	75	14	<High school	20	4
Missing	0	0	High school	64	12
<b>Race</b>			Associate's	126	23
American Indian/Alaskan Native	17	3	degree/Some college		
Asian	25	5	College degree	134	25
Black/African-American	68	13	Graduate degree	80	14
White	362	67	Missing	117	22
Multi-racial	35	6	<b>Family Annual Income</b>		
Other	23	4	<40K	97	18
Missing	9	2	40-79K	120	22
<b>Ethnicity</b>			>80K	200	37
Hispanic	108	20	Missing	122	23
Non-Hispanic	428	79			
Missing	3	1			
<b>Age at enrollment</b>	Mean(SD)	Range			
	16.1 (1.4)	13.6-20.9			
<b>Social Responsiveness Scale-2</b>	70.5 (12.3)	39-110			
<b>Visuel Adaptive Behavior Composite Standard Score</b>	75.8 (16.6)	20-131			
<b>Letter Non-Verbal IQ</b>	85.8 (27.2)	30-141			

## Measure

- The parent version of the SSSC included 105 items and the student version of the SSSC had 25 items (see Figure for example).
- Both sets of items were representative of four key domains: independent behavior, transition, social, and academic
- For each item, participants indicated on a Likert-type scale if the behavior was:
  - 0 = not like student
  - 1 = like student
  - 2 = much like student
- Respondents also provided a priority ranking for learning each item. The priority raking was used to calculate the proportion of students who "really wanted to learn" each skill.
- Priority ratings on the SSSC were collapsed from three levels (0, 1, 2) to two categories (0 vs 1 and 2, combining "sort of want to learn" or minor concern and "really want to learn" or major concern)

## Analysis

- Analyses were primarily descriptive with statistical tests of key relationships. Summaries of individual responses to SSSC items were provided for skill estimates by three informants: adolescents, parents, and teachers. Tests of mean differences on each item enabled comparisons and contrasts between informants.
- Differences between informants were estimated via 3-level HLM analyses.

## Skill Levels and Differences Between Informants

- Random effects for school largely non-significant with z-scores ranging from 0.33 to 1.95 and only three tests significant at p < .05. The intercepts for student, however did tend to be highly significant with z-scores ranging from 1.55 to 6.80 and only one non-significant, p = .0602 result.

Table 3. Model based group means and between group estimates for SSSC items and subscales

Item	Adolescent		Parent		Teacher		Adol. Par.		Adol. Teach.		Par. Teach.	
	Estimate (SE)	Diff. (SE)	Estimate (SE)	Diff. (SE)	Estimate (SE)	Diff. (SE)	Estimate (SE)	Diff. (SE)	Estimate (SE)	Diff. (SE)	Estimate (SE)	Diff. (SE)
<b>Independence</b>	1.38 (0.02)	1.05 (0.03)	1.14 (0.03)	0.31*** (0.03)	1.14 (0.03)	0.18* (0.03)	0.24*** (0.03)	0.01 (0.03)	0.01 (0.03)	0.01 (0.03)	0.01 (0.03)	0.01 (0.03)
Bring materials to class	1.66 (0.03)	1.21 (0.04)	1.35 (0.04)	0.45*** (0.04)	1.35 (0.04)	0.31*** (0.04)	0.14** (0.04)	0.04 (0.04)	0.04 (0.04)	0.04 (0.04)	0.04 (0.04)	0.04 (0.04)
Complete assignments	1.44 (0.03)	0.76 (0.04)	0.92 (0.04)	0.67*** (0.05)	0.92 (0.04)	0.51*** (0.05)	0.16** (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)
Ask for a break	1.48 (0.03)	1.17 (0.04)	1.02 (0.04)	0.31*** (0.04)	1.02 (0.04)	0.47*** (0.05)	0.19*** (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)
Stay calm	1.24 (0.03)	1.09 (0.04)	1.13 (0.04)	0.14** (0.05)	1.13 (0.04)	0.11 (0.05)	0.04 (0.05)	0.04 (0.05)	0.04 (0.05)	0.04 (0.05)	0.04 (0.05)	0.04 (0.05)
Respond appropriately to changes in schedule and routine	1.14 (0.04)	1.15 (0.04)	1.33 (0.04)	-0.01 (0.05)	1.33 (0.04)	-0.19*** (0.05)	-0.18*** (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)
Keep trying during hard task	1.45 (0.04)	0.91 (0.04)	1.01 (0.04)	0.52*** (0.05)	1.01 (0.04)	0.41*** (0.05)	0.11** (0.05)	0.08 (0.05)	0.08 (0.05)	0.08 (0.05)	0.08 (0.05)	0.08 (0.05)
Transition	1.59 (0.02)	1.21 (0.03)	1.33 (0.03)	0.37*** (0.03)	1.33 (0.03)	0.11** (0.03)	0.26*** (0.03)	0.10 (0.03)	0.10 (0.03)	0.10 (0.03)	0.10 (0.03)	0.10 (0.03)
Ask teachers for help	1.41 (0.03)	1.23 (0.04)	1.13 (0.04)	0.18*** (0.05)	1.13 (0.04)	0.28*** (0.05)	0.10 (0.05)	0.04 (0.04)	0.04 (0.04)	0.04 (0.04)	0.04 (0.04)	0.04 (0.04)
Solve problems in class	1.34 (0.03)	0.77 (0.04)	0.72 (0.04)	0.57*** (0.05)	0.72 (0.04)	0.61*** (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)
Have ideas about goals after high school	1.46 (0.04)	0.92 (0.04)	0.89 (0.04)	0.54*** (0.05)	0.89 (0.04)	0.58*** (0.05)	0.04 (0.05)	0.04 (0.05)	0.04 (0.05)	0.04 (0.05)	0.04 (0.05)	0.04 (0.05)
Look clean for school	1.71 (0.03)	1.41 (0.03)	1.67 (0.03)	0.30*** (0.04)	1.67 (0.03)	0.05 (0.04)	-0.25*** (0.04)	0.03 (0.04)	0.03 (0.04)	0.03 (0.04)	0.03 (0.04)	0.03 (0.04)
Follow rules	1.79 (0.03)	1.54 (0.03)	1.51 (0.03)	0.16*** (0.04)	1.51 (0.03)	0.19*** (0.04)	0.03 (0.04)	0.03 (0.04)	0.03 (0.04)	0.03 (0.04)	0.03 (0.04)	0.03 (0.04)
Navigate high school campus	1.72 (0.03)	1.66 (0.03)	1.72 (0.03)	0.06 (0.03)	1.72 (0.03)	0.00 (0.03)	-0.06 (0.03)	0.04 (0.03)	0.04 (0.03)	0.04 (0.03)	0.04 (0.03)	0.04 (0.03)
<b>Social</b>	1.45 (0.03)	0.96 (0.03)	1.09 (0.03)	0.49*** (0.04)	1.09 (0.03)	0.31*** (0.04)	0.18*** (0.04)	0.04 (0.04)	0.04 (0.04)	0.04 (0.04)	0.04 (0.04)	0.04 (0.04)
Talk with others about things they like	1.36 (0.03)	0.80 (0.04)	0.97 (0.04)	0.50*** (0.05)	0.97 (0.04)	0.39*** (0.05)	0.15*** (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)
Listen to others during interactions	1.54 (0.03)	0.87 (0.04)	1.08 (0.04)	0.66*** (0.04)	1.08 (0.04)	0.66*** (0.04)	0.46*** (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)
Ask teachers for clarifying information	1.39 (0.04)	1.23 (0.04)	0.97 (0.04)	0.18*** (0.05)	0.97 (0.04)	0.21*** (0.05)	0.24*** (0.05)	0.08 (0.05)	0.08 (0.05)	0.08 (0.05)	0.08 (0.05)	0.08 (0.05)
Compliment others	1.54 (0.04)	0.94 (0.04)	0.90 (0.04)	0.60*** (0.05)	0.90 (0.04)	0.64*** (0.05)	0.04 (0.05)	0.04 (0.05)	0.04 (0.05)	0.04 (0.05)	0.04 (0.05)	0.04 (0.05)
Identify emotions	1.37 (0.04)	1.06 (0.04)	0.94 (0.04)	0.22*** (0.05)	0.94 (0.04)	0.39*** (0.05)	0.12 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)
Offer to help others	1.33 (0.04)	1.09 (0.04)	0.98 (0.04)	0.24*** (0.05)	0.98 (0.04)	0.35*** (0.05)	0.11 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)
Work well in a group	1.26 (0.04)	1.07 (0.04)	1.02 (0.04)	0.19*** (0.05)	1.02 (0.04)	0.24*** (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)
<b>Academic (single item)</b>												
Understand reading for content areas	1.47 (0.04)	1.15 (0.04)	1.31 (0.04)	0.32*** (0.05)	1.31 (0.04)	0.15** (0.05)	-0.16** (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)

## Priorities

- The table indicates the percentage of respondents who identified that learning the skill was a priority (rating of 1 or 2) as well as a percentage of respondents who identified the skills as a high priority (rating of 2).

Table 4. Percentage of respondents indicating an SSSC item is a priority and high priority

Item	Adolescent % <sup>a</sup> (% HP) <sup>b</sup>	Parent % <sup>a</sup> (% HP) <sup>b</sup>	Teacher % <sup>a</sup> (% HP) <sup>b</sup>
<b>Independence</b>			
Bring materials to class	83.7 (43.7)	89.5 (35.4)	77.3 (28.1)
Complete assignments	84.3 (47.1)	94.8 (53.6)	85.7 (37.5)
Ask for a break	79.9 (47.4)	90.2 (34.7)	79.0 (32.3)
Stay calm	80.9 (52.3)	91.3 (35.9)	81.2 (34.1)
Respond appropriately to changes in schedule and routine	58.9 (34.5)	84.4 (30.7)	77.1 (47.1)
Keep trying during hard task	82.6 (52.6)	92.7 (47.2)	91.5 (43.3)
<b>Transition</b>			
Ask teachers for help	80.5 (40.0)	93.4 (48.0)	91.3 (37.8)
Solve problems in class	70.5 (33.6)	93.8 (39.8)	85.9 (34.5)
Have ideas about goals after high school	85.8 (60.5)	92.1 (54.0)	88.1 (33.6)
Look clean for school	77.5 (47.9)	88.4 (36.1)	71.0 (18.7)
Follow rules	74.8 (44.1)	82.4 (22.4)	84.2 (29.6)
Navigate high school campus	84.1 (53.0)	77.4 (24.7)	75.0 (31.8)
<b>Social</b>			
Talk with others about things they like	78.9 (40.4)	92.0 (39.5)	86.6 (31.1)
Listen to others during interactions	80.8 (40.6)	94.7 (41.2)	90.0 (36.4)
<b>Interactions</b>			
Ask teachers for clarifying information	81.5 (38.0)	93.3 (38.0)	88.7 (35.8)
Compliment others	69.4 (37.2)	77.5 (18.9)	73.6 (18.5)
Identify emotions	69.7 (45.5)	90.8 (32.9)	85.1 (22.8)
Offer to help others	75.9 (42.5)	83.4 (19.7)	68.4 (16.0)
Work well in a group	79.2 (39.7)	90.3 (31.8)	87.2 (28.7)
<b>Academic</b>			
Understand reading for content areas	79.8 (48.3)	89.4 (31.9)	86.2 (30.0)

<sup>a</sup> percent rated as a priority (rated as 1 or 2)  
<sup>b</sup> percent rated as a high priority (rated as 2)  
**bold 5** highest priority skills by respondent group  
*italic 5* lowest priority skills by respondent group

## Conclusion

- Findings from over 500 adolescents with ASD across the United States indicate discrepancies between adolescent, teacher, and parent ratings of skills highlighting the importance of the inclusion of multiple perspectives in transition planning.
- Although ratings varied, agreement between adolescents with ASD, parents, and teachers across the highest and lowest rated skills suggests the need to broaden the focus on critical transition skills to include problem solving, planning for life after high school, and self-advocacy.

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