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# **Preliminary Examination of the Reliability and Validity of the Teacher Rating Scale of Social Competence and School Adjustment for Preschool and Kindergarten Children**

*Kristen N. Missall, Kayla D. Polk, and Salloni Nanda*

## **Abstract**

Prosocial behaviors in preschool and kindergarten are associated with student well-being and positive school outcomes. A teacher rating scale focused on young children's social strengths can provide educators with important information for supporting children in their classroom with social instruction and intervention. The purpose of this study was to examine the technical adequacy of a teacher rating scale developed expressly to measure prosocial development in young children, the Scale of Social Competence and School Adjustment (SSCSA). Using data from a sample of preschool- and kindergarten-aged children in inclusive classrooms, analyses examined the reliability and validity of the SSCSA. Results provided evidence of internal consistency and strong test-retest reliability over two weeks. Analyses of concurrent validity with criterion measures showed strong positive correlations with subscales of social skills and moderate to strong negative correlations with subscales of problem behaviors. Overall, findings provided initial evidence that supports ongoing evaluation of the technical adequacy of the SSCSA.

**Keywords:** *preschool, kindergarten, social skill, teacher rating scale*

Social competence is a complex, multidimensional construct that encompasses a range of skills and functioning that directly impact social relationships and well-being in and out of school settings (Whitcomb, 2018). As early as preschool, 10-15% of children develop mild to moderate behavioral difficulties (Hemmeter et

al., 2016). Impairments in social competence are associated with various outcomes throughout childhood, adolescence and adulthood, including internalizing and externalizing behavior challenges (Bornstein et al., 2010), peer difficulties (Bierman et al., 2009), negative academic outcomes (Rabiner et al., 2016), and delinquency and degree of wellness (Jones et al., 2015). Because of this significant and enduring influence of social competence on overall well-being and school adjustment, it is important to focus on early identification and intervention for social development to reduce severity of symptoms and the likelihood of adverse outcomes. Moreover, intervening on prosocial skill development in early childhood helps to foster positive aspects of psychological functioning and adjustment, as opposed to treating maladaptive behaviors (Wentzel, 2014).

Given the linear relationship between outcomes and prosocial skills in early childhood, educators can play a critical role in addressing children's prosocial development in the classroom (Flook et al., 2015). In preschool and kindergarten, teachers promote prosocial behaviors by improving classroom climate and quality of teacher-student interactions (Hemmeter et al., 2016), providing emotional support (Johnson et al., 2013), providing positive models of prosocial behavior, and teaching and reinforcing prosocial skills (Bierman et al., 2009).

To support teachers' instruction and intervention planning for social development, assessment data must inform decision making. The most common methods of assessment of social competence include teacher and parent ratings. Teacher ratings, in particular, can help to identify students in need of additional supports in instructional settings. Currently, most teacher rating scales of social competence focus on problematic maladaptive social behaviors to identify atypicality within at-risk or clinically significant ranges for diagnostic purposes, although some tools include subscales of prosocial behavior (Whitcomb 2018; see also Table 1). Although identification of antisocial behaviors can be important for diagnosis, using a strength-based perspective to assess children's social

competence is at the forefront of research and practice (Whitcomb, 2018). For this reason, teacher rating scales that use a strengths-based approach to define social competence for young children may be central to supporting children's early school adjustment and social well-being (Pennefather & Smolkowski, 2015).

### **Prosocial Behavior Development in Preschool and Kindergarten**

Clusters of behaviors such as helping, sharing, cooperating, and volunteering are labeled as prosocial because they are aimed at benefiting oneself and others (Eisenberg et al., 2015). In preschool and kindergarten, students engage in many prosocial behaviors that include obeying rules, following social conventions, showing kindness, and being inclusive and friendly (Bergin, 2014). Numerous studies on prosociality among preschoolers and kindergarteners have shown positive relationships with academic, cognitive, and developmental outcomes (Bergin, 2014; Bierman et al., 2009; Denham, 2006).

Studies have also shown a positive correlations between preschoolers' prosocial skills and their interest in schoolwork, as well as working independently, taking turns, listening, paying attention, persisting, staying on task, and participating in class activities (Bierman et al., 2009; McClelland & Morrison, 2003). Longitudinal studies with kindergarteners have shown that students who are more prosocial have greater cognitive self-control, which predicts higher achievement in language and mathematics in 1<sup>st</sup> grade (Normandeau & Guay, 1998), reading and mathematics in 3<sup>rd</sup> grade (Romano et al., 2010), and overall academic achievement across primary grades (Elias & Haynes, 2008). Preschool and kindergarten students who are more prosocial are also liked more by their peers and teachers, which results in improved school adjustment (Johnson et al., 2000) and increased school success (Wentzel, 2014).

## **Importance of Measuring Prosocial Behaviors at School**

To promote prosocial behavior in the classroom, teachers need to assess students' social development. Data collected by teachers can provide information about students who might need specific instruction to support social development and to aid in decision-making about continuing or changing intervention for students (Classen & Cheatham, 2015). In preschool and kindergarten, teachers who provide emotional support tend to have positive student-teacher relationships and to use inductive discipline techniques that play an important role in promoting prosocial behaviors among students (Ramaswamy & Bergin, 2009; Upshur et al., 2013). Hence, interventions at school can be designed to foster students' strengths, positive behaviors and resiliency, and to prevent maladaptive behaviors (Masten & Motti-Stefanidi, 2009).

Common methods used to assess students' prosocial and problem behaviors in schools include teacher referral or nomination, direct observation, daily report cards, rating scales, and office disciplinary referrals (Eklund et al., 2009; Miller et al., 2014). Direct observations and daily report cards require training and time and lack strong psychometric properties, specifically with concurrent validity and treatment sensitivity (Cordier et al., 2015). Moreover, research has shown that office discipline referrals under-identify students with behavioral challenges, whereas teacher nominations over-identify (Miller et al., 2014).

Teacher rating scales are an appealing assessment method because they are straightforward to complete, inexpensive, time-efficient, and informative about important low-frequency behaviors (Jones et al., 2015). Additionally, because students spend many hours in classrooms, teacher ratings are among the most common methods to obtain information about children's social behaviors (Eklund & Dowdy, 2014).

## **Teacher Rating Scales of Prosocial Behavior in Preschool and Kindergarten**

Several teacher rating scales for assessing social behavior among preschool and elementary-age children have representative and updated standardization samples, and are used commonly (Whitcomb, 2018; Table 1), particularly for assessing developmental delays and identifying disabilities (Crowe et al., 2011; Miller et al., 2014). These scales have evidence of moderate to strong reliability and validity (see Cordier et al., 2015; Crowe et al., 2011 for systematic reviews); however they vary in purpose and application.

All of the scales presented in Table 1 as well in systematic reviews (e.g., Cordier et al., 2015; Crowe et al., 2011) focus on problem behaviors (e.g., aggressive, disruptive, maladaptive, and inattentive behaviors). The logic for this structure is both theoretical and empirical – problem behaviors predict social difficulties, and norm-referenced scores are used frequently for service eligibility and diagnosis (Crowe et al., 2011). Some of the measures in Table 1 also have prosocial behavior subscales, which theoretically and empirically balance the definition of social competence and are useful for describing a child's full range of social development relative to peers (Cordier et al., 2015). However, when teacher rating scales focus on positive social behaviors, the results are most applicable for instruction and for intervention for individual children in a school context (Crowe et al., 2011).

**Table 1.** *Commonly Used Teacher Rating Scales in Preschool and Kindergarten*

Measure	Reference	Subscales
Achenbach System of Empirically Based Assessment Teacher Report Form (ASEBA TRF) <sup>1, 2</sup>	Achenbach & Rescorla, 2000, 2001	Anxious/Depressed, Withdrawn/Depressed, Somatic Complaints, Social Problems, Thought Problems, Attention Problems, Rule Breaking Behavior, and Aggressive Behavior
Behavior Assessment System for Children, Third Edition (BASC-3) <sup>1, 2</sup>	Reynolds & Kamphaus, 2015	Adaptive Skills, Behavioral Symptoms Index, Externalizing Problems, Internalizing Problems, and School Problems
Devereux Student Strengths Assessment (DESSA) <sup>2</sup> ; Devereux Student Strengths Assessment-Mini (DESSA-Mini) <sup>2</sup>	LeBuffe, Shapiro, & Naglieri, 2009; Naglieri, LeBuffe, & Shapiro, 2011	Self-Awareness, Social-Awareness, Self-Management, Goal-Directed Behavior, Relationship Skills, Personal Responsibility, Decision Making, and Optimistic Thinking; Overall Social Competence
Devereux Early Childhood Assessment for Preschoolers, Second Edition (DECA-P2) <sup>1</sup>	LeBuffe & Naglieri, 2012	Initiative, Self-Regulation, Attachment/Relationships, and Behavioral Concerns
Preschool and Kindergarten Behavior Scale, Second Edition (PKBS-2) <sup>1, 2</sup>	Merrell, 2002	Social Cooperation, Social Interaction, Social Independence, Externalizing Problems, and Internalizing Problems
Social-Emotional Assets and Resilience Scales-Teacher (SEARS-T) <sup>2</sup>	Merrell, Cohn, & Tom, 2011	Responsibility, Social Competence, Empathy, and Self-Regulation
Social Skills Improvement System-Rating Scales (SSIS-RS) <sup>1, 2</sup>	Gresham & Elliott, 2008	Social Skills, Competing Problem Behaviors, and Academic Competence

*Note.* <sup>1</sup> = preschool, <sup>2</sup> = kindergarten

## **Current Study**

Given that prosocial behaviors are associated with student well-being and positive school outcomes, and teacher rating scales are often used for assessing social development, the purpose of this study was to examine the technical adequacy of a teacher rating scale developed expressly to measure prosocial development in young children, the Scale of Social Competence and School Adjustment (SSCSA; Table 2). The SSCSA is a teacher rating scale of 56 prosocially-oriented items developed for research (described subsequently in the method). The SSCSA has been used in research, and because it may have classroom utility, this study was conducted to evaluate its technical adequacy for viability beyond research. Specific research questions included: 1) To what extent does the SSCSA identify internal consistency in identifying prosocial behaviors of young children as rated by teachers? 2) To what extent does the SSCSA demonstrate test-retest reliability as rated by teachers? and 3) To what extent does the SSCSA show concurrent validity with measures of social and problem behaviors as rated by teachers?

## **Method**

### **Participants**

Data were collected from inclusive preschool and kindergarten classrooms as part of a larger study. The larger study collected schoolwide information about children's social development, and their language, literacy, and numeracy development (Missall et al., 2020). This current study reports the full range of data collected to inform children's social development.



**Table 2.** *Items on the Scale of Social Competence and School Adjustment*

- 
1. The child converses appropriately.
  2. The child takes turns when playing.
  3. The child controls their energy without hurting others.
  4. The child plays cooperatively.
  5. The child varies their social behavior appropriately.
  6. The child is persistent at social attempts.
  7. The child responds spontaneously to peers.
  8. The child appears to be having fun.
  9. Peers interacting with the child appear to be having fun.
  10. The child continues an interaction once it has begun.
  11. Peers seek out the child for social play.
  12. The child uses appropriate social behavior to begin an interaction.
  13. The child enters play activities without disrupting the group.
  14. The child suggests new play ideas for a playgroup.
  15. The child smiles appropriately at peers during play.
  16. The child observes other children playing.
  17. The child shares play materials with peers.
  18. The child engages in play activities where social interaction might occur.
  19. The child changes activities with peers to continue interactions.
  20. The child uses free time appropriately.
  21. The child shares laughter with peers.
  22. The child shows concern for others.
  23. The child makes friends easily with other children.
  24. The child asks peers questions during play.
  25. The child compromises with peers when the situation calls for it.
  26. The child responds to teasing or name-calling by ignoring, changing the subject, or some other appropriate means.
  27. The child accepts suggestions from peers without becoming angry.
  28. The child provides assistance to peers spontaneously when they need it.
  29. The child is sensitive to the needs of others.

30. The child initiates conversations with peers.
31. The child expresses anger appropriately (reacts to situations without becoming violent or destructive).
32. The child listens carefully to teacher instructions and directions.
33. The child answers, or attempts to answer, questions asked by the teacher.
34. The child works independently when appropriate.
35. The child copes with aggression by others appropriately (walks away, seeks assistance, or defends self).
36. The child responds to conventional behavior management techniques (redirection, praise, reprimands).
37. The child cooperates with peers in group activities.
38. The child plays with a number of different peers.
39. The child uses physical contact with peers appropriately.
40. The child responds to adult requests promptly.
41. The child listens while others speak in group or circle time.
42. The child controls temper.
43. The child compliments others.
44. The child accepts not getting their own way.
45. The child attends to assigned tasks or activities.
46. The child has good skills for playing games and participating in activities.
47. The child keeps conversations and play with peers going.
48. The child finds another way to play when requests to join in are refused.
49. The child is considerate of the feelings of others.
50. The child maintains eye contact when speaking or being spoken to.
51. The child gains peers' attention in an appropriate way.
52. The child accepts suggestions or assistance from peers.
53. The child invites peers to play or share activities.
54. The child works on teacher-designed projects as directed.
55. The child produces work of acceptable quality, given current skill level.
56. The child talks with peers about assigned tasks and projects.

### ***Full Sample***

The full sample of children was used to evaluate the internal consistency of the SSCSA. Across one school year of data collection, 146 children and 6 teachers consented to participate. The average age of child participants at the start of data collection was 52.38 months (range = 36-72 months). Table 3 shows child data at the start of data collection. Over one-half of children were reported as White ( $n = 82$ , 56.2%); race for remaining participants was reported as African American ( $n = 16$ , 11.0%), two or more races ( $n = 16$ , 11.0%), Asian American ( $n = 15$ , 10.3%), Hispanic/Latinx ( $n = 6$ , 4.1%), Middle Eastern ( $n = 2$ , 1.4%), Native Hawaiian/Pacific Islander ( $n = 1$ , 0.7%), other ( $n = 4$ , 2.7%), and race was not reported for four children (2.7%). The majority of children ( $n = 130$ , 89.0%) spoke English as their primary home language. Almost one-half ( $n = 66$ , 45.2%) was reported to have an Individual Education Plan (IEP).

Of the six teachers that participated, the median number of years teaching was 6 years (range = 4-13) and the median number of years teaching in early education was 5 years (range = 3-13). All teachers had a master's degree in education, special education or early childhood special education, and a current state teaching certification and special education certification.

### ***Split Sample***

The full sample of participating children was split into three smaller samples to examine test-retest reliability and concurrent validity of the SSCSA. The full sample was divided into three equal groups using a random number generator and their teachers were asked to complete either the Preschool and Kindergarten Behavior Scales, Second Edition (PKBS-2;  $n = 37$  completed), Social Skills Improvement System-Rating Scales (SSIS-RS;  $n = 33$  completed), or a second SSCSA ( $n = 34$  completed; Table 4). The average age of children for whom the PKBS-2 was completed was 52.6 months, 54.0 months for the SSIS-RS, and 51.8 months for the SSCSA retest. Across the three groups of children, percentages by sex, ethnicity, and IEP status were similar (Table 3).

**Table 3.** *Child Descriptives for Full and Split Samples of Children and Missing Data*

Variables	Full Sample ( <i>n</i> = 146)	SSCSA Retest ( <i>n</i> = 34)	PKBS-2 ( <i>n</i> = 37)	SSIS-RS ( <i>n</i> = 33)	Missing ( <i>n</i> = 42)
<b>Sex</b>					
1. Male	85 (58.2%)	18 (52.9%)	23 (62.2%)	22 (66.7%)	22 (52.4%)
2. Female	61 (41.8%)	16 (47.1%)	14 (37.8%)	11 (33.3%)	20 (47.6%)
<b>Race</b>					
1. White	82 (56.2%)	14 (41.2%)	19 (51.4%)	16 (48.5%)	33 (78.6%)
2. African American	16 (11.0%)	5 (14.7%)	4 (10.8%)	5 (14.2%)	2 (4.8%)
3. Asian	15 (10.3%)	5 (14.7%)	3 (8.1%)	4 (12.1%)	3 (7.1%)
4. Hispanic	6 (4.1%)	2 (5.9%)	2 (5.4%)	2 (6.0%)	0 (0.0%)
5. Middle Eastern American	2 (1.4%)	1 (2.9%)	1 (2.7%)	0 (0.0%)	0 (0.0%)
6. Native Hawaiian	1 (0.7%)	0 (0.0%)	1 (2.7%)	0 (0.0%)	0 (0.0%)
7. Two or more races	16 (11.0%)	5 (14.7%)	4 (10.8%)	5 (15.2%)	2 (4.8%)
8. Other	4 (2.7%)	0 (0.0%)	2 (5.4%)	1 (3.0%)	1 (2.4%)
9. Unreported	4 (2.7%)	2 (5.9%)	1 (2.7%)	0 (0.0%)	0 (0.0%)
<b>Grade Level</b>					
1. P3	43 (29.5%)	13 (38.2%)	10 (27.0%)	9 (27.3%)	11 (26.2%)
2. P4	69 (47.3%)	16 (47.1%)	17 (45.9%)	17 (51.5%)	19 (45.2%)
3. Kindergarten	34 (23.3%)	5 (14.7%)	10 (27.0%)	7 (21.2%)	12 (28.6%)
<b>IEP Status</b>					
1. IEP	66 (45.2%)	13 (38.2%)	17 (45.9%)	17 (51.5%)	19 (45.2%)
2. No IEP	77 (52.7%)	20 (58.8%)	18 (48.6%)	16 (48.5%)	23 (54.8%)
3. Unknown	3 (2.1%)	1 (2.9%)	2 (5.4%)	0 (0.0%)	0 (0.0%)

*Note.* P3 = preschool for 3-year olds two years prior to kindergarten; P4 = preschool for 4-year olds one year prior to kindergarten; IEP = Individual Education Plan. Missing = participants missing from split sample with no returned PKBS-2, SSIS-RS, or SSCSA retest.

**Missing Data**

Notably, of the full sample of 146 participants, 42 rating scales were not returned for split sample analyses and missing data rates are high (28.8%; Table 3). Chi-square analyses comparing participants for whom data were returned for the SSCSA retest, PKBS-2, or SSIS-RS ( $n = 104$ ) and the sample of missing data ( $n = 42$ ) revealed no statistically significant group differences across any demographic variable. Table 4 provides the number of completed rating scales by teacher for the split sample of children. Sample sizes for each scale are large enough for analysis and relatively consistent across measures (Johanson & Brooks, 2010).

**Table 4.** *Rating Scale Completion by Teachers A through F*

	A <i>n</i> (%)	B <i>n</i> (%)	C <i>n</i> (%)	D <i>n</i> (%)	E <i>n</i> (%)	F <i>n</i> (%)
PKBS-2 ( <i>n</i> = 37)	0 (0%)	8 (29.6%)	9 (34.6%)	5 (33.3%)	5 (31.3%)	10 (29.4%)
SSIS-RS ( <i>n</i> = 33)	0 (0%)	8 (29.6%)	8 (30.8%)	5 (33.3%)	5 (31.3%)	7 (20.6%)
SSCSA retest ( <i>n</i> = 34)	0 (0%)	9 (33.3%)	9 (34.6%)	5 (33.3%)	6 (37.5%)	5 (14.7%)
Missing ( <i>n</i> = 42)	28 (100%)	2 (7.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	12 (35.3%)
Total Completed	0 (0%)	25 (93%)	26 (100%)	15 (100%)	16 (100%)	22 (65%)

*Note.* The full sample was divided into thirds and assigned the PKBS-2, SSIS-RS, or SSCSA retest. Numbers of classroom participants vary because some teachers had full-day or half-day classrooms.

## Measures

### *Scale of Social Competence and School Adjustment (SSCSA)*

The SSCSA is a researcher-developed teacher rating scale for identifying discrete and observable behaviors in preschool and kindergarten (Table 2). Items on the SSCSA were modeled after the Walker McConnell Scale of Social Competence and School Adjustment – Elementary (Walker McConnell–Elementary; Walker & McConnell, 1995), a teacher rating scale for students in kindergarten through 6<sup>th</sup> grade. The Walker McConnell–Elementary has evidence of moderate to strong reliability, and strong concurrent correlations with criterion measures (Crowe et al., 2011). Because the Walker McConnell–Elementary is not appropriate for preschool-age children, items on the SSCSA were written for younger children to follow three empirically-validated subscales of the Walker McConnell–Elementary (i.e., peer-preferred social behaviors, teacher-preferred social behaviors, school adjustment). Here, and in other work (e.g., Hojnoski et al., 2018), a SSCSA total score is used because small samples have precluded testing of the SSCSA to evaluate an empirically-derived factor structure (DeVellis, 2012).

The SSCSA takes less than 10 minutes to complete per child. Fifty-six items make up the SSCSA and teachers rate behaviors on a 5-point Likert scale (1 = never or rarely, 3 = occasionally, 5 = frequently). Each item represents the degree to which a behavior is present; therefore, behaviors identified as needing additional development could be targeted for intervention. Raters are asked to complete each item based on how often the child has exhibited the behavior described in each item in the past four weeks.

One study examined the concurrent validity of the SSCSA total score with observed social engagement behavior data from the Behavior Observation of Students in Schools – Early Education (BOSS-EE; Hojnoski et al., 2014). Results showed a positive moderate correlation with observed child engagement on the BOSS-EE ( $r = .64, p = .01$ ), and a negative moderate correlation with observed

off-task, interfering behaviors on the BOSS-EE ( $r = -.58, p = .01$ ; Hojnoski et al., 2018).

### **Preschool Kindergarten Behavior Scales**

The PKBS-2 (Merrell, 2002) has evidence of strong technical adequacy and is a common teacher and parent rating scale of social behavior for children aged 3-6. Items are rated on a 4-point Likert scale (0 = never, 3 = often), and produce two norm-referenced scores of behavior problems and social skills. Completion takes 12 minutes per child.

### **Social Skills Improvement System - Rating Scales**

The SSIS-RS (Gresham & Elliott, 2008) examines problem behaviors, social skills and academic competence, and has evidence of strong technical adequacy. Items on the teacher form are rated on a 3-, 4-, or 5-point Likert scale and create three norm-referenced scores. The teacher form takes 15-20 minutes to complete per child.

### **Procedures**

Data were generated across one academic year and included all age-eligible children at the school. In the fall, one SSCSA for each child was distributed to the lead teacher in each classroom; the same procedure was followed in the spring. Teachers were asked to complete rating scales within two weeks. Two weeks after spring SSCSA data were collected, teachers were divided into three groups using a random number generator. Teachers in the three groups were asked to complete either the PKBS-2, SSIS-RS, or another SSCSA within one week. Of the six participating teachers, one did not return any data for the PKBS-2, SSIS-RS, or SSCSA retest (Table 4). Teachers were compensated with a gift card.

## **Data Analysis**

### ***Reliability***

To evaluate the internal consistency reliability of the SSCSA, we computed Cronbach's alpha coefficients using the full sample of children ( $n = 146$ ). Cronbach's alpha is likely to be higher when all items on the scale share common variance (DeVellis, 2012). The minimum sample size required to analyze reliability using coefficient alpha varies (Bonett, 2002); however, studies with sample sizes comparable to the current study reported Cronbach's alpha to examine internal consistency of measures (e.g., Moen & Sheridan, 2019; Partington et al., 2018).

Test-retest reliability examines reliability in terms of consistency or repeatability of a measure. An important assumption of test-retest reliability is that participants' scores are stable over the time interval of testing. The time interval should not be too short to avoid carryover effects, but should also not be too long, as to avoid true changes in the construct measured. A suggested time interval to avoid both of these influences is two weeks (Multon, 2010). We computed Pearson product-moment correlation coefficients for SSCSA total scores for the same participants as rated by teachers over a two-week time interval ( $n = 34$  with missing data).

### ***Validity***

To evaluate concurrent validity using the split sample of children, Pearson product-moment correlation coefficients were calculated between three rating scales completed within two weeks: (a) the SSCSA total score and the PKBS-2 subscale and composite scale scores ( $n = 37$ ), and (b) the SSCSA total score and the SSIS-RS subscale and composite scores ( $n = 33$ ). Because split sample sizes were small but included at least 30 participants for two predictors, an alpha level of .01 was used to address increased probability of Type I errors (DeVellis, 2012).



## Results

To examine internal consistency of the SSCSA, analysis of the 56 items revealed a high coefficient ( $\alpha = .99$ ) at both time points for the full sample of children. Specifically, the time point 1 total mean score was 195.53 ( $\alpha = .988$ ); time point 2 total mean score was 212.80 ( $\alpha = .993$ ). Coefficient alpha values between .80 and .89 are good indices of reliability, whereas values of .90 and above are excellent indices (Schmitt, 1996). The high, statistically significant correlation coefficients suggest a high degree of internal consistency for the SSCSA.

To examine test-retest reliability, teachers completed the SSCSA twice over a two-week interval for 34 children. A Pearson product-moment correlation coefficient of .89 ( $p \leq .0001$ ) was obtained for the SSCSA total score, demonstrating strong test-retest reliability. Additionally, mean total scores over the two-week time interval did not differ significantly ( $M = 215.76$ ;  $SD = 53.68$  to  $M = 221.32$ ;  $SD = 53.57$ ), with a mean difference of 5.56. A paired-samples  $t$ -test ( $t = -1.28$ ,  $p = .21$ ) further confirmed the consistency of teachers' ratings.

To examine concurrent validity, Pearson product-moment correlation coefficients for the SSCSA, PKBS-2, and SSIS-RS were examined (Table 5). The SSCSA total score and PKBS-2 Social Skills Composite score were significantly and highly correlated ( $r = .91$ ), and coefficients ranged from .82 to .88 for the Social Skills subscales. With the SSCSA total score, correlation coefficients were moderate but significant with Externalizing Problems ( $r = -.52$ ), Internalizing Problems ( $r = -.68$ ), and Problem Behaviors ( $r = -.64$ ).

Because the SSIS-RS manual provides standard scores for scales and raw scores for subscales (Gresham & Elliott, 2008), correlation coefficients are reported between the SSCSA total score and the SSIS-RS total score, scale standard scores, and raw subscale scores. Among the 7 subscales that make up the Social Skills scale on the SSIS-RS, correlation coefficients ranged from .82 to .92 (Table 5). The correlation between the SSCSA total score and SSIS-RS Social

Skills scale was .94 ( $p \leq .0001$ ), suggesting a strong relationship between items on the SSCSA and items on the SSIS-RS Social Skills scale. Among the 5 subscales of the Problem Behaviors scale, correlation coefficients ranged from -.29 to -.91 (Table 5). The SSCSA total score and SSIS-RS Problem Behaviors scale demonstrated a correlation of -.73 ( $p \leq .0001$ ).

**Table 5.** *Concurrent Validity of SSCSA Total Score, PKBS-2 Composite and Subscale Scores, and SSIS-RS Scale and Subscale Scores*

	Mean Score	<i>r</i>	<i>p</i>
PKBS-2 Social Skills Composite*	98.73	.906	<.0001
Social Cooperation*	100.19	.822	<.0001
Social Interaction*	97.92	.864	<.0001
Social Independence*	98.27	.883	<.0001
PKBS-2 Problem Behaviors Composite*	92.84	-.643	<.0001
Externalizing Problems*	93.03	-.515	.001
Internalizing Problems*	94.11	-.680	<.0001
SSIS-RS Social Skills Scale*	91.97	.944	<.0001
Communication+	13.27	.924	<.0001
Cooperation+	11.61	.885	<.0001
Assertion+	11.33	.822	<.0001
Responsibility+	11.82	.906	<.0001
Empathy+	9.85	.823	<.0001
Engagement+	12.39	.905	<.0001
Self-Control+	12.94	.868	<.0001
SSIS-RS Problem Behaviors Scale*	103.39	-.727	<.0001
Externalizing+	7.18	-.693	<.0001
Bullying+	1.58	-.594	<.0001
Hyperactivity/Inattention+	6.09	-.721	<.0001
Internalizing+	3.21	-.288	.104
Autism+	13.03	-.912	<.0001

*Note.* \*standard scores ( $M = 100$ ,  $SD = 15$ ); +raw scores

## **Discussion**

Teacher rating scales are used widely for assessing the social behaviors of young children (Crowe et al., 2011). Most teacher rating scales focus predominantly on the identification of maladaptive behaviors for diagnosis and service eligibility (Whitcomb, 2018). Although the SSCSA was developed for research purposes, it may have classroom utility for supporting children's prosocial skill development. Therefore, the primary purpose of this study was to examine the technical adequacy of the SSCSA, a teacher-rating scale of prosocial behavior and school adjustment for children in preschool and kindergarten. Specifically, the adequacy of the SSCSA was assessed by examining internal consistency, test-retest reliability, and concurrent validity with other established measures of social competence.

First, the SSCSA showed strong internal consistency for this sample of children. Alpha coefficients were statistically significant and high; however, the high alpha may reflect the high number of items on the SSCSA, strong interrelatedness among items or general factor saturation, rather than unidimensionality (Cho & Kim, 2015; Schmitt, 1996). Second, using a two-week interval, SSCSA test-retest reliability of a subsample of 34 children was strong. Last, concurrent validity was examined. The SSCSA total score demonstrated strong, positive correlations with the social skills subscales of the PKBS-2 and SSIS-RS. As suspected given the prosocial items, the SSCSA total score demonstrated moderate to strong negative correlations with most of the problem behavior subscales -- excluding items related to internalizing behaviors. Taken together, findings provide preliminary evidence that supports the ongoing evaluation of the technical adequacy of the SSCSA.

## ***Limitations and Future Research***

There were limitations in the current study. First, although the full sample was of considerable size, the split sample of participants

used to analyze test-retest reliability and concurrent validity was smaller. A larger sample size would increase confidence in findings and improve statistical power. Second, because data were collected from one site, the results may not generalize to other geographical regions.

Third, the high percentage of children with disabilities in the current sample may not be reflective of the makeup of other schools. Concomitantly, given the dominance of compensatory preschool programs in the United States serving children with delays and disabilities, and the lack of universal preschool programs (Cannon et al., 2017), there may be benefits to findings that the SSCSA has potential use with children with identified disabilities. In particular, research suggests that identification of discrete social skills for intervention design and delivery (i.e., such as emotion understanding [SSCSA items 15, 21, 22, 31, 49, for example], and social initiation [SSCSA items 6, 12, 30, 47, 50, for example]) can produce positive outcomes (Nix et al., 2013; Stanton-Chapman & Brown, 2015).

Fourth, we acknowledge the nested data structure with students located in classrooms, and that outcomes are not independent of this. Ignoring a nested data structure may lead to erroneous reliability estimations, examining a scale's total variability rather than examining reliability at multiple levels of analysis. Despite limitations, sample sizes were sufficient to warrant analyses and results demonstrated initial evidence of reliability and validity.

Future research may seek to replicate this study using a larger sample to address limitations, confirm estimations of reliability and validity, and test intended item and factor structures. Pilot work has suggested it may be possible to reduce the number of items on the SSCSA while retaining technical adequacy and clarifying factor structure (Missall et al., 2018). Additionally, it is important to obtain information about teachers' perceptions of SSCSA items.

### ***Implications for Practice***

Items on the SSCSA reflect social behaviors that children must demonstrate to experience positive peer and adult relationships and overall early school success. One of the drawbacks of common teacher ratings scales of social behavior is their reliance on behaviors that early educators do not want children to demonstrate. It is more meaningful and useful for an educator to identify and support desired behaviors than to identify the absence of desired behaviors (Whitcomb, 2018). Often, when the results of a rating scale indicate a child has challenging behaviors, the results only confirm what early educators already know. However, a measure like the SSCSA with items that represent necessary skills can lead an educator to identify social learning and instructional goals to support children (Meisels & Atkins-Burnett, 2000).

Early intervention is critical for improving challenging behaviors. Like a large majority of teacher rating scales examining social skills, social interventions are often deficit-based by focusing on the reduction of problem behaviors (Sutherland et al., 2010). With deficit-oriented rating scales and interventions, teachers may reinforce problem behaviors and may not recognize or reinforce desirable behaviors (Sutherland et al., 2010). A strengths-based approach to assessment can assist teachers in building on children's relative strengths (Fenton et al., 2015).

### **Conclusion**

Social competence is associated with various positive and negative developmental outcomes (Bergin, 2014; Bornstein et al., 2010; Wentzel, 2014) and overall well-being and school adjustment (Johnson et al., 2000). It is pertinent to have assessment methods of social competence to support instruction and intervention planning; however, commonly used methods tend to focus on the absence of prosocial behaviors, which are difficult to link to instruction and intervention. The SSCSA, which demonstrates strong evidence of reliability and validity, allows teachers and professionals

to identify discrete and observable social behaviors in preschool and kindergarten children to promote children's positive social development and well-being.

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