Preliminary Study on the Development of the Autism Self-Efficacy Scale for Teachers (ASSET)

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Background Information

- Understanding teacher self-efficacy and its influences are important for teachers responsible for challenging learners with complex needs because these teachers are at risk of stress, burnout, and attrition.
- Results thus far have indicated that teachers with lower reported self-efficacy are found to experience more difficulties in teaching, decreased job satisfaction, and higher levels of stress relative to teaching (Betoret, 2006; Kokkinos & Davazoglous, 2009; Ruble, Usher, & McGrew, 2011).
- Although there is no information on the effects of teaching students with specific diagnostic labels, teachers of students with autism may face particular challenges due to the increase in prevalence rates and the unique deficits in social, communication, and restricted and repetitive behavior (Jennett et al., 2003; Kokkinos & Davazoglou; Ruble et al, 2011).
- Despite these concerns, little research has examined the role of teacher self-efficacy among teachers of students with ASD and it has been suggested that a self-efficacy measure more sensitive to the skills and tasks required of teachers of students with ASD should be used in future research (Ruble, et al., 2011).

Purpose

- The purpose of our study was two-fold: (a) to evaluate the psychometric properties (dimensionality, internal consistency, and construct validity) of the ASSET; and (b) to replicate findings of a previous study (Ruble et al., 2011) with a new sample utilizing ASSET and examine concurrent correlations with teacher stress and burnout.

Research Hypothesis

1. The Autism Self Efficacy Scale for Teachers (ASSET) will demonstrate adequate internal consistency.
2. Teacher self efficacy will be negatively associated with teacher stress associated with teaching students with autism.
3. Teacher self efficacy will not be associated with general measures of burnout that is not associated with teaching students with autism.

Method

Participants:

- 44 special education teachers who currently had at least one student with autism between the ages of 3 and 8 years.
- 98% of the teachers were female (n = 43), and had a mean class or caseload seize of 12.4 students (SD = 5.3).
- The mean number of years teaching was 11.3 (SD = 8.2) and 3.4 years (SD = 16.2) for teaching students with autism.
- Half of the teachers came from schools located in small towns (less than 75,000 residents), while the remaining teachers were from schools situated in large cities (a city with more than 75,000 residents).

Measures:

The Autism Self-Efficacy Scale for Teachers (ASSET). This 30-item self-report measure gains insight into the perceptions of special education teachers regarding their own beliefs about their ability to conduct various assessment, intervention, and classroom-based practices particular to the needs of students with ASD. Items are rated by the teacher as the degree of confidence in their ability to perform each task with regard to a particular student with ASD in their classroom ranging from 0 (*cannot do at all*) to 100 (*highly certain can do*). Sample reliability was .96 (95% bootstrap CI [.93, .98]).

Sample Items from the ASSET
2. Describe this student's characteristics that relate to autism.
5. Write a measurable objective for this student.
10. Help this student understand others.
13. Assess the causes of problematic behaviors for this student.
17. Make use of data to re-evaluate this student's goals or objective.
22. Train peer models to improve the social skills of this student.
26. Help this student remain engaged.
30. Teach this student academic skills.

The Maslach Burnout Inventory (MBI). This 22 item self-report measure was used to assess physiological and affective states of teacher burnout. Items are rated by the teacher in regard to how often they experience the feeling indicated by each item using a 7-point Likert-type scaled ranging from 0 (*never*) to 6 (*every day*). The MBI is designed to assess the following three components of burnout: (1) emotional exhaustion, (2) depersonalization, and (3) personal accomplishments.

The Index of Teaching Stress (ITS). This measure was used to assess teacher perceptions regarding the impact of interactions with their student with autism on teacher level of distress. Part B of the scale is comprised of 43 self-report items that use a 5-point Likert-type scale ranging from 1 (*never distressing*) to 5 (*very distressing*). The ITS consists of four subscales: self-doubt/needs support, loss of satisfaction from teaching, disrupts teaching process, and frustration working with parents.

Procedures:

- Participants were recruited through a multi-step process as part of a larger randomized controlled study in two mid-southern states examining COMPASS consultation and coaching with teachers of students with autism and child outcomes (Ruble, Dalrymple, & McGrew, 2012).
- Once enrolled, participants were randomly assigned to either the control group (15) or one of the two experimental conditions, a face-to-face (14) or web-based (15) coaching condition.

Results

Psychometric Properties.

ASSET Item #	M	SD	Min	Max	Skewness	Kurtosis	Pattern Loading
1	71.02	21.15	20	100	-.52	-.58	.71
2	80.91	13.99	50	100	-.86	.18	.62
3	70.00	17.39	40	100	-.12	-1.16	.70
4	76.59	17.41	40	100	-.69	-.65	.78
5	82.84	16.47	50	100	-.85	-.42	.83
6	78.52	20.05	30	100	-.85	-.28	.86
7	81.34	17.58	30	100	-1.07	.57	.89
8	75.57	16.50	40	100	-.64	-.52	.80
9	80.23	15.66	30	100	-.99	.99	.70
10	60.23	20.17	0	90	-.57	-.31	.53
11	68.30	17.15	30	100	-.12	-.79	.59
12	77.16	17.20	40	100	-.71	-.32	.54
13	72.39	17.60	20	100	-.80	.86	.74
14	73.07	18.12	20	100	-.71	.36	.81
15	76.70	15.77	40	100	-.44	-.46	.75
16	83.30	16.14	40	100	-1.04	.54	.70
17	82.61	14.20	50	100	-.62	-.38	.74
18	76.93	17.02	50	100	-.41	-1.02	.76
19	76.82	15.67	40	100	-.53	-.45	.74
20	68.30	16.32	40	100	-.03	-1.22	.71
21	69.43	18.02	30	100	-.41	-.55	.69
22	63.86	20.93	20	100	-.18	-.52	.35
23	77.84	19.54	10	100	-1.37	2.19	.52
24	85.57	17.09	30	100	-1.54	1.88	.39
25	79.77	17.98	30	100	-.95	.31	.51
26	69.66	14.12	30	95	-.64	.27	.68
27	63.98	17.90	20	95	-.29	-.47	.65
28	67.95	19.48	20	100	-.50	-.39	.73
29	72.05	18.37	20	100	-.81	.22	.70
30	72.61	19.96	20	100	-.58	-.42	.63

Table 1. *Descriptive Statistics and Factor Pattern Loadings for Items on the ASSET*

Dimensionality.

- In our sample the dominant first factor explained 49.24% (Eigen value of 14.77) of the variability in items followed by 8.61% (2.58) for the second component.
- Based on an inspection of the scree plot, parallel analysis using the mean and 95th percentiles, and ratio of first eigenvalue to second ratio > 3 (Gorsuch, 1983) we determined that the ASSET consisted of one dominant factor.
- All pattern loadings were considered to be substantial with no overlap in item content.

Validity Evidence.

- As expected, ITS subscale scores were negatively related with ASSET scores and all MBI subscale scores showed near zero linear relationships with ASSET scores.
- Also, self-doubt/need for support scores had the strongest negative relationship with ASSET scores.
- Although the ITS subscale scores on loss of satisfaction from teaching and frustration working with parents were not statistically significant related with scores on the ASSET, they were in the predicted direction.

Measure	M	SD	1	2	3	4	5	6	7
1. ASSET	74.48	11.97							
2. ITS Self-Doubt/Need Support	33.78	14.37	-.38*						
3. ITS Loss of Satisfaction	19.45	8.31	-.20	.84*					
4. ITS Disruption of Teaching	12.76	5.37	-.31*	.87*	.87*				
5. ITS Frustration with Parents	8.79	4.59	-.17	.59*	.69*	.60*			
6. MBI Emotional Exhaustion	19.38	9.21	-.06	.49*	.35*	.38*	.29*		
7. MBI Depersonalization	2.51	3.12	.05	.33*	.37*	.44*	.27*	.46*	
8. MBI Personal Accomplishment	39.96	6.50	-.07	-.28*	-.44*	-.27*	-.28*	-.44*	-.23

Table 2. *Pearson Correlation of Scores Between the ITS, MBI, and ASSET (N = 44)*

Discussion

Research Contribution

- Results suggest that confidence in one's ability to conduct assessment, intervention, and classroom-based practices particular to the unique needs of students with ASD may be associated with self-doubt.
- Findings also suggest that special education teachers need continued support from administrators and educators knowledgeable about ASD in order to maximize the quality of the educational experience for both special education teachers and students with ASD.
- The lack of association between the ASSETT and MBI suggests that measures specific to autism are necessary because general measures may not be sensitive and fail to capture teacher ratings of a particular child with ASD, unlike the ITS and ASSET measures that ask the teacher to respond with a specific student in mind.

Limitations

- The sample size for this study was relatively small and findings should be replicated in a larger sample.
- Data were collected at baseline of the larger randomized controlled study which took place during the beginning of the school year. As a result, it may be the case that teachers were limited in the quantity and nature of their interactions with the particular student with autism being referenced. Therefore, scores related to teacher stress may not be fully representative of teacher stress in educating children with autism as a whole, in that the level of stress may increase or decrease as the school year progresses.

Future Research

- Future research could consider using Item Response Theory (IRT) methods to take a closer look at how items on the ASSET are performing and to examine whether the entire continuum of self-efficacy for teaching children with autism is being measured with the ASSET or only a limited range of the continuum.
- Future research could use IRT to see if shorter forms of the ASSET could provide comparable information for the entire continuum of self-efficacy and validity evidence. IRT was not used in our analyses due to the small sample size.
- Finally, future studies can also examine ways to enhance self-efficacy and examine its role in the application of evidence-based practices in autism.

References

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