Title:

Implementation of Tools for Getting Along: Equipping Educators to Teach Students to Get Along

Authors and Affiliations:

Jennifer Nakamura, SRI International (jennifer.nakamura@sri.com)

Elisa Garcia, SRI International (elisa.garcia@sri.com)

Carl Sumi, SRI International (carl.sumi@sri.com)

Yunsoo Park, SRI International (yunsoo.park@sri.com)

Abstract Body

Background/Context

Disruptive behavior is widespread and consequential in elementary schools. Successful academic and behavioral outcomes in school depend in part on students' positive social-emotional development (Downer & Pianta, 2006; Riggs et al., 2006). Social-emotional learning (SEL) encompasses students' development of skills such as executive functions (EFs) and social problem-solving. (Zins et al., 2007). Executive functions refer to a child's ability to inhibit responses, flexibly switch among rules or instructions, and simultaneously store and update information (Blair et al., 2005; Carlson, 2005). Social problem-solving is a process in which students find solutions to everyday problems by identifying and defining a problem, generating solutions, and assessing the outcome (Merrill et al., 2017). These skills and other related social-emotional competencies are integral to children's school success; school settings present an optimal opportunity to implement interventions to develop students' social-emotional skills.

Universal interventions targeting SEL that are implemented in the school setting can be an effective way to strengthen social-emotional skills for all students (Daunic et al., 2012; Durlak, et.al., 2011). However, due to limited time or a lack of training, implementing universal interventions in the school setting with fidelity can pose a challenge to educators, (Pasi, 2001; Pavri, 2004), which can lead to variability in the expected intervention outcomes (Lendrum & Humphry, 2012; Yeung, et.al., 2015). Examining implementation fidelity in the school setting can provide information on whether a universal SEL intervention is sustainable and is crucial to understanding the intervention's impact on student outcomes.

Purpose/Objective/Research Question

The purpose of this study was to assess whether teachers implemented Tools for Getting Along (TFGA), a universal SEL intervention specifically focused on social problem-solving, in the classroom with fidelity under routine conditions. This study also examined the extent to which teacher implementation fidelity predicted student outcomes. Our research questions were:

1. Did teachers trained to implement the TFGA curriculum do so with fidelity (as measured by percentage of lessons completed and lesson quality)?
2. To what degree was the level of TFGA implementation fidelity related to student outcomes?

Setting

For this study, the TFGA program was implemented in elementary schools in California, Oklahoma, and Kentucky to ensure geographic diversity.

Population/Participants/Subjects

Participants in the current study included 52 fourth-grade teachers in 18 elementary schools (student n = 700).

Intervention/Program/Practice

Tools for Getting Along (TFGA) (Daunic et al., 2006) is a classroom-based, 26-lesson social problem-solving intervention that is theoretically aligned with Crick and Dodge's (1994) social information-processing model. It is designed to help upper elementary school students (grades 4-5) become more proactive problem-solvers as they encounter social challenges.

For this study, TFGA program developers trained participating teachers in a 2-day formal training. After receiving training in the fall, teachers implemented the TFGA curriculum independently over the course of the school year under routine classroom conditions.

Research Design

Data for this implementation study were drawn from a larger randomized controlled trial evaluating the impact of the TFGA intervention in schools. This study specifically examined implementation data for teachers who were randomly assigned to receive training in and implement TFGA.

Data collection and Analysis

We surveyed teachers and students on students' behavior regulation, EFs, and problem behaviors. Fidelity to the TFGA curriculum was assessed with four classroom observations conducted over the course of implementation. We calculated the overall percentage of lesson components completed, averaging across lessons observed for all teachers. We also rated teachers on the quality with which they delivered each observed lesson on a scale of 1–5, with 5 indicating the highest quality.

To characterize teachers' implementation of TFGA, we calculated descriptive statistics of the percentage of lesson components completed and the lesson quality ratings. To examine how implementation fidelity of TFGA related to student outcomes, we analyzed data using a Hierarchical Linear Modeling (HLM) framework that accounted for the nested nature of the data (i.e., students within schools). All models included a random intercept for schools.

Findings/Results

First, we examined whether teachers implemented the TFGA curriculum with fidelity, as measured by the percentage of lesson components completed and lesson quality ratings. The average lesson completion percentage across all teachers was 88%, with a standard deviation of 10%. The average lesson quality rating across all teachers in the sample was 3.2 with a standard deviation of .5. These results indicate that teachers implemented the TFGA curriculum with high fidelity in terms of both percentage of lessons completed and lesson quality.

Next, we examined whether the percentage of lessons completed and lesson quality predicted teacher- and self-reported student problem behaviors, executive function, and problem-solving skills in the spring. We found that higher percentage of lessons completed and higher lesson

quality both predicted higher scores on a student-reported measure reflecting students' knowledge of the problem-solving steps taught in the TFGA curriculum (Tables 5 and 6).

Teachers completed the Behavioral Rating Inventory of Executive Functions (BRIEF), which captures students' behavior regulation, including inhibitory control, the ability to modify behavior, and the ability to manage emotions. Findings indicated that higher lesson quality ratings significantly predicted total scores on the BRIEF (Table 8).

Conclusions

This study provides evidence that the TFGA curriculum was feasible for teachers to implement in the school setting. The high level of implementation fidelity across teachers indicates that teachers successfully implemented the TFGA curriculum as it was designed with minimal support after receiving initial training. Furthermore, this study provides evidence that implementation fidelity was related to student outcomes, specifically knowledge of problem-solving and EFs.

We highlight the importance of implementation fidelity in ensuring that behavioral interventions have the intended outcomes. The results of this study indicate that while completing a high percentage of an intervention curriculum is important, the quality of implementation is also essential for having the greatest impact on student outcomes. This study provides preliminary support that when implemented with fidelity, TFGA holds promise as a universal intervention to develop students' social problem-solving skills.

References

Blair, C., Zelazo, P. D., & Greenberg, M. T. (2005). The measurement of executive function in young children. *Developmental Neuropsychology, 561-571*.

Carlson, S. (2005). Developmentally sensitive measures of executive function in preschool children. *Developmental Neuropsychology, 28*, 595-616.

Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychological Bulletin, 115*, 74-101.

Daunic, A. P., Smith, S. W., Brank, E. M., & Penfield, R. D. (2006). Classroom based cognitive–behavioral intervention to prevent aggression: Efficacy and social validity. *Journal of School Psychology, 44*, 123–139.

Daunic, A. P., Smith, S. W., Garvan, C. W., Barber, B. R., Becker, M. K., Peters, C. D., . . . Naranjo, A. H. (2012). Reducing developmental risk for emotional/behavioral problems: A randomized controlled trial examining the Tools for Getting Along curriculum. *Journal of School Psychology, 50*, 149–166.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405–432.

Downer, J. T., & Pianta, R. C. (2006). Academic and cognitive functioning in first grade: Associations with earlier home and child care predictors and with concurrent home and classroom experiences. *School Psychology Review, 35*(1), 11-30.

Lendrum, A., & Humphrey, N. (2012). The importance of studying the implementation of interventions in school settings. *Oxford Review of Education, 38*(5), 635–652.

Merrill, K. L., Smith, S. W., Cumming, M. M., & Daunic, A. P. (2017). A review of social problem-solving interventions: Past findings, current status, and future directions. *Review of Educational Research*, 87(1), 71–102.

Pasi, R. (2001). *Higher expectations: Promoting social emotional learning and academic achievement in your school*. New York, NY: Teachers College Press.

Pavri, S. (2004). General and special education teachers' preparation needs in providing social support: A needs assessment. *Teacher Education and Special Education, 27*(4), 433-443.

Riggs, N. R., Greenberg, M. T., Kusche, C. A., & Pentz, M. A. (2006). The mediational role of neurocognition in the behavioral outcomes of a social-emotional prevention program in elementary school students: Effects of the PATHS curriculum. *Prevention Science, 7*, 91-102.

Yeung, A. S., Craven, R. G., Mooney, M., Tracey, D., Barker, K., Power, A., … Lewis, T. J. (2016). Positive behavior interventions: The issue of sustainability of positive effects. *Educational Psychology Review*, *28*(1), 145–170.

Zins, J. E., Bloodworth, M. R., Weissberg, R. P., & Walberg, H. J. (2007). The scientific base linking social and emotional learning to school success. In J. E. Zins, R. P. Weissberg, M. C. Wang, & H. J. Walberg (Eds.), *Building academic success on social and emotional learning: What does the research say?* (pp. 3–22). New York, NY: Teachers College Press.

Table 1: Descriptive statistics for student-reported measures by interval

	Fall	Spring
	M (SD)	M (SD)
Anger Expression Scale for Children		
Trait anger	18.0 (5.7)	19.2 (6.1)
Anger expression	9.7 (3.4)	10.4 (3.6)
Anger-in	9.6 (2.8)	9.6 (3.0)
Anger control	16.9 (4.4)	16.1 (4.3)
Social Problem-Solving Inventory		
Positive problem orientation scale	16.5 (4.2)	15.6 (4.5)
Negative problem orientation scale	25.1 (8.3)	25.8 (8.3)
Rational problem-solving scale	58.7 (15.0)	56.2 (16.6)
Impulsivity, carelessness style	23.9 (7.4)	24.5 (8.2)
Avoidance style	17.1 (5.3)	16.8 (5.3)
Problem-Solving Knowledge		
Total score	8.6 (3.1)	11.5 (4.3)

Table 2. Descriptive statistics for teacher-reported measures by interval

	Fall	Spring
	M (SD)	M (SD)
BRIEF		
Emotional Regulation	21.2 (7.0)	21.4 (7.1)
Behavior Regulation	19.6 (7.0)	19.4 (7.0)
Cognitive Regulation	47.1 (16.2)	46.7 (16.0)
BRIEF Total	87.8 (27.8)	87.5 (27.4)
CAB		
Internalizing	70.3 (10.2)	69.1 (10.7)
Externalizing	80.9 (13.4)	80.1 (13.4)
Social Skills	74.2 (12.3)	74.6 (13.0)
Competence	71.6 (15.1)	71.6 (14.7)

Table 3. Average Percentage of Lessons Completed

	Mean	**SD**	**Min**	**Max**
Percent Complete	88%	10%	56%	100%

Table 4. Average Teacher Quality Ratings

	Mean	SD	Min	Max
Quality rating	3.2	.5	2	4.7

Table 5. HLM Results for Percentage of Lessons Completed Predicting Spring Student-Reported Measures

Scale	B	SE	p
Anger Expression Scale for Children			
Trait Anger	1.66	2.27	0.47
Anger Expression	0.82	1.33	0.54
Anger In	-0.18	1.13	0.88
Anger Control	-0.17	1.67	0.92
Social Problem-Solving Inventory			
Positive Problem Orientation Scale	0.54	1.93	0.78
Negative Problem Orientation Scale	0.35	2.89	0.90
Rational Problem Solving	4.35	6.20	0.48
Impulsivity Carelessness Style	-0.37	2.95	0.90
Avoidance Style	1.33	2.05	0.52
Problem-Solving Knowledge	3.84	1.79	0.03

Note: Models control for fall scores and include random intercept on schools.

Table 6. HLM Results for Lesson Quality Predicting Spring Student-Reported Measures

Scale	B	SE	p
Anger Expression Scale for Children			
Trait Anger	0.74	0.44	0.09
Anger Expression	0.17	0.25	0.51
Anger In	-0.07	0.21	0.72
Anger Control	-0.39	0.33	0.24
Social Problem-Solving Inventory			
Positive Problem Orientation Scale	-0.02	0.37	0.96
Negative Problem Orientation Scale	0.34	0.53	0.52
Rational Problem Solving	0.24	1.11	0.83
Impulsivity Carelessness Style	-0.16	0.53	0.76
Avoidance Style	-0.25	0.37	0.51
Problem-Solving Knowledge	0.89	0.34	0.01

Note: Models control for fall scores and include random intercept on schools.

Table 7. HLM Results for Percentage of Lessons Completed Predicting Spring Teacher-Reported Measures

Scale	B	SE	p
Behavioral Rating Inventory of Executive Functions			
Behavior Regulation Index	0.24	2.12	0.91
Emotional Regulation Index	0.44	2.18	0.84
Cognitive Regulation Index	-4.20	4.72	0.37
BRIEF Total	-3.66	7.95	0.65
Clinical Assessment of Behavior			
Internalizing	5.08	3.56	0.15
Externalizing	3.58	3.93	0.36
Social Skills	-0.78	4.00	0.84
Competence	3.93	4.16	0.35

Note: Models control for fall scores and include random intercept on schools.

Table 8. HLM Results for Lesson Quality Predicting Spring Teacher-Reported Measures

Scale	B	SE	p
Behavioral Rating Inventory of Executive Functions			
Behavior Regulation Index	-0.37	0.43	0.38
Emotional Regulation Index	-0.73	0.43	0.09
Cognitive Regulation Index	-1.75	0.95	0.07
BRIEF Total	-3.17	1.62	0.05
Clinical Assessment of Behavior			
Internalizing	0.32	0.72	0.66
Externalizing	1.26	0.78	0.11
Social Skills	0.38	0.79	0.63
Competence	0.17	0.83	0.84

Note: Models control for fall scores and include random intercept on schools.