



Adventures Aboard the S.S.GRIN improved SEL during the pandemic

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This research brief summarizes the positive findings that emerged from the WestEd Social Skills Training Study during the pandemic for an audience of district leads, principals, teachers, and other school practitioners. This specific efficacy study was conducted by WestEd in the 2019-2020 and 2020-2021 school years and funded by the Institute of Education Sciences (IES).

CONTEXT

Purpose

The aim of the study was to explore the impact of the Adventures Aboard the S.S.GRIN (Adventures) program in the school setting for third graders. *Adventures* is a game-based online social-emotional learning (SEL) training program designed to improve socio-emotional skills and peer relationships for elementary school students.

The Intervention

The game-based, online *Adventures* program is based on a small-group in-person program, S.S. GRIN. S.S. GRIN was developed based on research in developmental psychology and aims to build social-emotional skills for elementary students, addressing all five SEL competency clusters identified by CASEL. The S.S. GRIN program has been used by thousands of students in schools across the United States and abroad for over 20 years, and is listed in the rigorous National Registry of Evidence-based Programs and Practices compiled by the Substance Abuse and Mental Health Services Administration's (SAMHSA). However, despite

The study focused on the following research questions:

1. Is the *Adventures* program treatment more effective than the control for improving students' social-emotional skills?
2. Is the *Adventures* program treatment more effective than the control for improving students' social-emotional skills for students with social-emotional challenges identified at the beginning of the study?
3. Is the *Adventures* program treatment more effective than the control for improving students' social-emotional skills when implemented with higher fidelity?

S.S.GRIN's success, the traditional in-person nature of the program meant that many students who stood to benefit from such programs faced barriers to accessibility and/or implementation, limiting the program's scalability and reach. In response to this, *Adventures* was designed to translate the content and cognitive-behavioural strategies of the established, evidence-based S.S.GRIN into a game-based, virtual educational setting.



THE STUDY

Study Participants (Cohort 1 and 2)

The study was conducted with two cohorts from 2019-20 and 2020-21—one cohort per academic year. In total, study participants consisted of 1,645 third-grade students from 88 third-grade classrooms from 37 schools in four California public-school districts. The study utilized a multi-site cluster randomized experimental design: The third-grade classrooms were randomly assigned to one of two conditions -- a treatment condition that used the *Adventures* program, or a control condition that used the school's business-as-usual program.

Measures

Quantitative and qualitative measures were used to measure *Adventure's* impact on student outcomes and teacher practices, and to monitor fidelity of the program's implementation.

Outcome Measures	Fidelity Components
Screening Measures: <ul style="list-style-type: none"> Devereux Student Strengths Assessment-Mini (DESSA-Mini) Teacher Ratings of Student SEL Outcomes: <ul style="list-style-type: none"> Behavioral and Emotional Rating Scale Second Edition (BERS-2) Social Skills and Behavioral Index (SSBI) Student Direct Assessments on SEL Learning: <ul style="list-style-type: none"> SELweb ZooU 	<ul style="list-style-type: none"> <i>Adventures</i> usage (log data of students' <i>Adventures</i> usage) Teachers' reports of conducting post-episode discussions Weekly teacher implementation logs

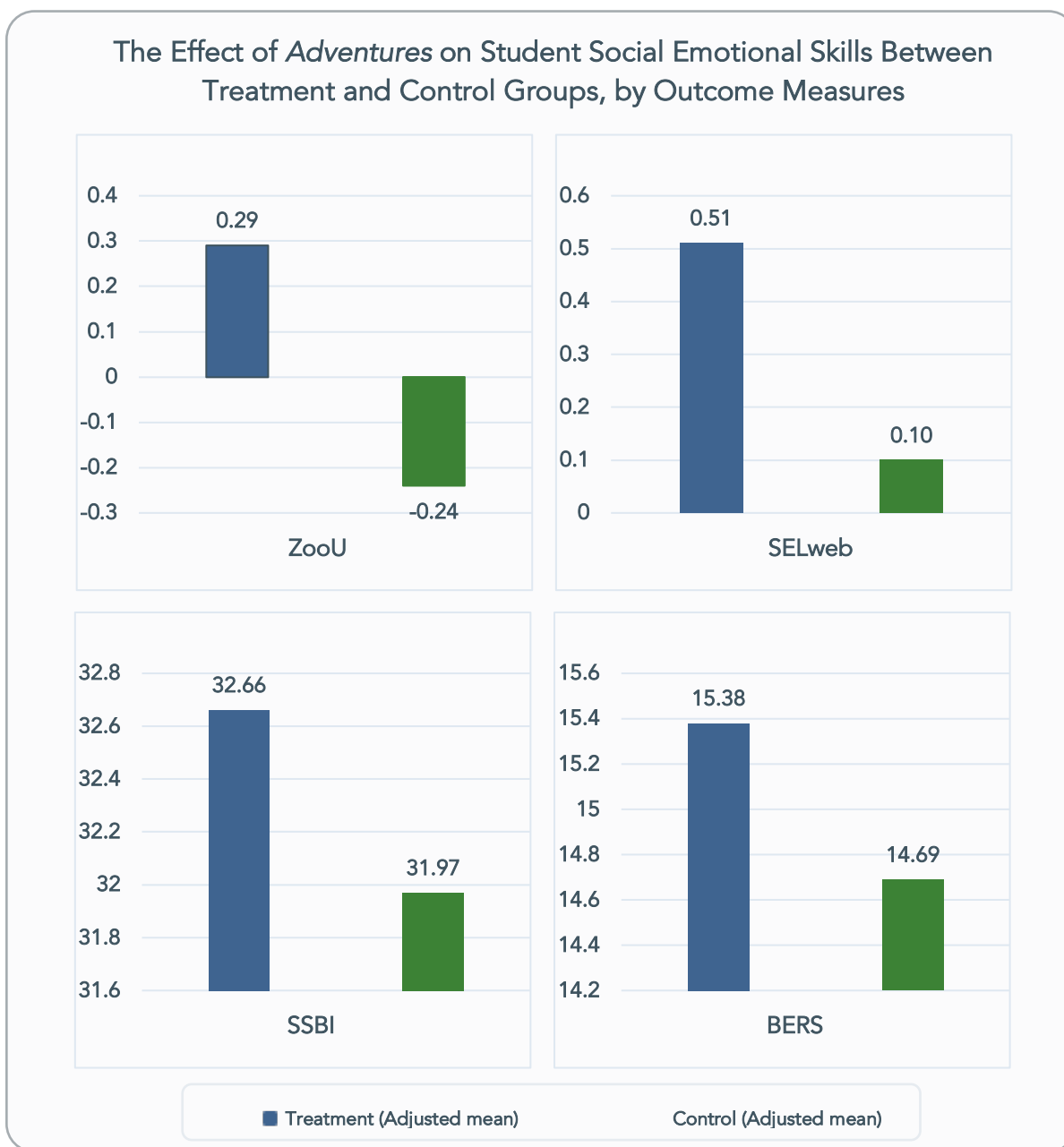
Implementation

Treatment teachers were asked to implement *Adventures* for nine weeks, one episode per week (estimating 30–45 minutes per episode) after a training session. Two additional weeks were added to allow teachers the opportunity to make up students' missed gameplay due to skipped weeks, creating an 11-week implementation period. The research team maintained communication with participating teachers using various communication methods throughout the study, and asked teachers to complete a weekly teacher log to report on various implementation and classroom information.

Implementation for Cohort 1(2019-2020) initially started in person at the beginning of the study, but shifted to distance learning in the Spring of 2020 due to pandemic stay-at-home orders. Cohort 2 (2020-2021) was implemented according to each districts' hybrid instructional models, with some schools returning to some degree of in-person learning while some schools remained fully remote. For the most part, *Adventures* was implemented remotely for Cohort 2.

KEY FINDINGS

Overall Impact of Adventures



- Results from the study indicated that **Adventures** was positively and significantly associated with gains in students' social and emotional skills related to communication, cooperation, empathy, emotion regulation, impulse control, and social initiation (.60 effect size derived from ZooU measures) as well as emotion recognition, social perspective-taking, social problem-solving, delay of gratification, and frustration tolerance (.41 effect size derived from SELweb measures).
- Additionally, the results indicated that the **Adventures** program was also positively and significantly associated with gains in students' interpersonal strength as measured by teacher ratings using BERS-2 (effect size=0.19).
- Similarly, subgroup analysis of students with different social-emotional skills and different implementation fidelities revealed that **Adventures** benefits all students in the treatment condition.
- In both Cohorts 1 and 2, teachers reported that they were generally able to implement **Adventures** smoothly and that students were able to use **Adventures** independently after an initial learning period.
- Across both cohorts, teachers reported high levels of student engagement with **Adventures** and positive user experiences. Teachers observed that program learnings filtered into students' daily lives; students applied what they had learned during peer interactions to solve problems and encourage others. **Students looked forward to playing the game.**

"[The students] welcomed that game. That was just something they really looked forward to. They were excited to play, so I think they had a very positive experience with it." – Teacher

- Teachers also observed **attitude or behavior changes in their students** from using the *Adventures* program. They shared examples of students respectfully addressing interpersonal issues with classmates and relating more positively to their peers.
 - Two program factors appeared to primarily contribute to students' enjoyment overall: (1) **story** and (2) **game format**. The game's story format delivered an engaging plot and ending.

"I definitely saw better behavior, at least, from certain students. They took what they learned and they implemented [it] into their real [lives]. I also saw a lot of kids looking forward to it. They would finish an episode and . . . ask when they can do the next one. It wasn't just like a game for them; it was something that they really enjoyed, which made my eyes open up a little bit because it was something different for them, where I'm not teaching it to them -- they're learning it themselves." - Teacher

- A distinct theme that emerged from our interviews with teachers was that **the context of distance learning reflected both an amplified need for, and the timely importance of, social-emotional programs and support – now more so than ever**. Teachers reflected on the many social-emotional challenges that students faced in the context of distance learning which not only affected the implementation of *Adventures*, but also detrimentally impacted students' social-emotional health.

Questions about the report, or interested in scaling *Adventures* in your district?

Please contact Kylie Flynn at kylie.flynn@wested.org or 850-445-0073.

For more information, please visit:

- <https://www.wested.org/project/efficacy-study-of-adventures-aboard-the-s-s-grin-social-emotional-and-academic-skills>
- <https://www.centervention.com/>

Appendix

Table 1: The Effect of Adventures on Student Social Emotional Skills

	Tx (adjusted mean)	Cx (adjusted mean)	Diff	SE	p- value	Hedges' g	Tx (n)	Tx (SD)	Cx (n)	Cx (SD)
ZooU	0.29	-0.24	0.53	0.044	<.001	0.60	588	0.808	725	0.917
SELweb	0.51	0.10	0.41	0.039	<.001	0.41	578	1.001	716	1.016
SSBI	32.66	31.97	0.69	0.436	0.115	0.11	530	6.391	566	6.385
BERS	15.38	14.69	0.70	0.226	0.002	0.19	530	3.637	566	3.544

Table 1 summarizes the treatment impact between the treatment and control groups (indicated in the “Diff” column), along with the adjusted means and unadjusted standard deviations for each outcome measure. **Except for SSBI, the treatment group scored higher than their counterpart, with the effect size ranging from .11 to .60.** The estimated average treatment effect was statistically different between the treatment and control groups on ZooU (difference=.53, $p<.001$) and SELweb (difference=.41, $p<.001$). Similarly, the estimated average treatment effect as measured by BERS was also statistically significant (difference=.70, $p<.05$). For SSBI, it appears the treatment students received a higher rating than the control students. However, the difference is not statistically significant at the .05 level. Using the Benjamini-Hochberg adjusted critical p-values, the difference is still significant for ZooU, SELweb, and BERS (the adjusted critical p-values are .013, .025, and .038, respectively).



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