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School leader engagement in strategies to support effective implementation of an SEL program

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ABSTRACT

Study aims were to describe school engagement in strategies to support implementation of a universal SEL program and examine whether strategy engagement predicted end-of-year program adherence (i.e., lesson completion). A multiple case study evaluation was utilized with schools implementing the Second Step® Elementary and Middle School digital program. School implementation leaders ($N = 222$) completed a survey in fall 2022, indicating level of engagement in four strategies: (1) communication of a shared SEL vision, (2) creation of an implementation plan, (3) identification of data to monitor implementation progress, and (4) provision of SEL training to school staff. They also reported on leader support for the program and barriers to implementation. A small majority of respondents (62%) reported communicating a shared SEL vision to all staff. Less than half to half of respondents (29–51%) reported engaging in the other strategies, and those with an implementation team were more likely to engage in strategies. Schools with a shared SEL vision and an implementation plan were less likely to report encountering barriers to implementation. Having identified data to monitor implementation progress was the only strategy that predicted higher levels of lesson completion.

Social-emotional learning (SEL) is critical for children's academic and life success (Jones et al., 2015; Moffitt et al., 2011). Durlak et al. (2022) reviewed 12 meta-analyses examining the effects of SEL programs on a variety of outcomes among one million prekindergarten to grade 12 students. Results consistently showed that compared to students who did not participate in the programs, students who did showed greater improvement in SEL skills, attitudes, prosocial behaviors, and academic achievement, along with reduced conduct problems and emotional distress. Given the strong evidence base, the adoption of SEL programs has become a key school-wide tactic for creating positive learning environments (Schwartz et al., 2022). But after schools adopt an SEL program, many struggle to attain high-quality, sustained implementation, reflected by inconsistent and incomplete use of programs (Durlak & DuPre, 2008; Gottfredson & Gottfredson, 2002; Ringwalt et al., 2004). When programs are not implemented as intended, or with fidelity, student outcomes are less likely to be achieved (Durlak & DuPre, 2008). The current study examined the extent to which school leaders engage in best practice recommendations for supporting effective implementation of SEL programs and whether engagement in these practices predicts better implementation fidelity of a widely used SEL program.

Factors impacting implementation fidelity: the socio-ecological context of schools

SEL program implementation is impacted by various socio-ecological factors, or the context in which programs are situated (Atkins et al., 1998). Consistent with this perspective, Domitrovich et al. (2008) proposed an implementation framework for SEL programs in which three primary levels of systems can affect implementation in schools: (1) individual level, involving characteristics of those delivering the program, such as the professional and psychological characteristics of staff, (2) school/district level, such as leader support for program implementation, and (3) macro level, such as the availability of state and federal funding for SEL and policies that support program use.

Role of school leaders in program implementation

The individual level of the system has the most direct impact on implementation fidelity because this level represents the staff, most often teachers, who are responsible for delivering SEL programs to students. The next level of the system, the school/district level, impacts teachers' attitudes and behaviors, in particular their motivation and

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capacity to implement universal SEL programs. School leaders can include administrators, such as principals or assistant principals, as well as teachers and other support staff responsible for facilitating programs schoolwide. In a systematic review of factors associated with the implementation of social, emotional, and behavioral programs, Baffsky et al. (2023) found consistent evidence for the important role of school principals/administrators in helping to drive effective implementation. For instance, Lohrmann et al. (2008) interviewed technical assistance providers for the schoolwide Positive Behavior Support program. Lack of administrative direction (e.g., communicating their support for the program to all staff, allocating resources needed to implement the program) was a key barrier identified as impeding program resistance among school staff. In a quantitative study of factors linked with success of an SEL program, Kam et al. (2003) found that schools with strong principal support for the program, along with high levels of implementation fidelity by teachers, demonstrated better student outcomes than schools with lower levels of principal support.

School principals and administrators support effective, sustained implementation by empowering shared leadership for program implementation (Allensworth & Hart, 2018). In addition to the role of school principals, Baffsky et al. (2023) found consistent evidence for the importance of having an implementation team within schools to support program implementation throughout the school year. Because school administrators inevitably turnover, having shared leadership across representative stakeholders can improve the sustainability of SEL programs (McIntosh et al., 2013). Based on retrospective interviews with school staff who led implementation of SEL programs, key characteristics perceived to make implementation teams more effective included having dedicated time to meet on a regular basis and having team members with different skillsets to support implementation, such as logistics and coordination, data analysis, SEL expertise and coaching (Freeman et al., 2014; Hudson et al., 2020; Huguet et al., 2022).

Strategies to support implementation fidelity

Use of a new program should be guided by implementation strategies, defined as "the methods or techniques used to enhance the adoption, implementation, or sustainability of a program or practice" (Proctor et al., 2013, p. 2). Once a program has been selected for use in a school, there are specific strategies that school leaders should engage in to motivate staff and support effective program implementation. According to implementation frameworks (Meyers et al., 2012), leaders should be engaging in these strategies during each stage of the program implementation process. During the early, pre-implementation phase, leaders should construct a plan for engaging staff in program training, setting program goals, and determining actions needed to achieve the goals. When implementation gets underway (i.e., active implementation), leaders should monitor implementation progress and ensure that staff receive the necessary support to improve and sustain effective implementation over time. These various leader support activities and practices can be organized according to four implementation strategies that research suggests should improve teacher motivation and capacity to implement SEL programs with fidelity:

- Communicating a shared vision for SEL to all staff and the role a particular SEL program plays in achieving that vision (CASEL, 2021a; Strickland-Cohen et al., 2014)
- Developing an implementation plan, including program goals and action steps needed to achieve the goals (Merle et al., 2022; Meyers et al., 2012)
- Identifying implementation and/or outcome data to monitor progress (Meyers et al., 2012; Strickland-Cohen et al., 2014)
- Providing access to professional learning and ongoing support/assistance (Merle et al., 2022; Meyers et al., 2012; Ulla & Poom-Valickis, 2023)

Communication of a shared vision for SEL. Unlike programs for content areas like reading and math, SEL may not be explicitly tied to or integrated with other schoolwide practices and initiatives. Perhaps as a result, school staff may be skeptical of the benefits of an SEL program for students (Lohrmann, 2008). Creating a shared vision for SEL is one strategy recommended by the Collaborative for Academic, Social, and Emotional Learning (CASEL), as part of its theory of action for schoolwide SEL. Communicating a schoolwide vision for SEL may increase staff awareness of the importance of SEL for achieving the school's broader goals related to student success, and the role an SEL program plays in achieving those goals (CASEL, 2021a). Although creating a vision for SEL has been studied in the context of other strategies designed to support systemic SEL (Freeman et al., 2014; Meyers et al., 2019), no extant studies have examined its association with the implementation fidelity of an SEL program. However, studies examining the implementation of other types of programs have shown that staff awareness of why it is important to implement a program is essential for improving staff motivation or buy-in for the program (Scaccia et al., 2015). And staff motivation for SEL is tied to better implementation fidelity of SEL programs (Brackett et al., 2012; Brink et al., 1995; Gingiss et al., 1994; Kincaid et al., 2007).

Development of an implementation plan. Developing a plan to support implementation is a strategy that is recommended across a range of program types (Meyers et al., 2012). An effective implementation plan typically includes the identification of program goals, specific tasks, staff responsible, and timelines to accomplish tasks (CASEL, 2021a; Meyers et al., 2012). Having such a detailed plan can help mitigate risks and increase accountability for program implementation. In doing so, the plan likely sends a message to staff that a program is a priority for school leaders, which is related to improved staff motivation to implement programs (Scaccia et al., 2015). In a meta-analysis of strategies shown to improve implementation fidelity of social, emotional, and behavioral programs, Merle et al. (2022) found that implementation action planning was a consistently effective strategy. However, in most of the studies qualifying for the meta-analysis, the planning was conducted by outside experts (e.g., researchers or implementation consultants) rather than by school leaders.

Use of data to monitor progress. Evidence also supports the utilization of data to monitor program completion (Baffsky et al., 2023). Qualitative studies suggest that regular review and communication of implementation and outcome data can serve as a signal to staff that a program is a priority and thus increases accountability to implement the program with fidelity (Andreou et al., 2015; Strickland-Cohen et al., 2014). Data monitored can include adherence to program practices and student outcomes expected to improve (e.g., decreased disciplinary incidents, improved perception of school safety). For instance, based on interviews with leadership team members supporting the implementation of an SEL professional development program, Freeman et al. (2014) found that providing regular updates on positive trends in student outcome data (e.g., reduction in disciplinary incidents) was perceived as a key facilitator of gains in teachers' knowledge and skills and usage of program components in the classroom. Similarly, a quantitative study involving implementation of a school-based mental health intervention indicated that providers' use of data to monitor progress throughout the implementation period predicted better adherence to the program (Livet et al., 2018).

Provision of program training and ongoing support/assistance. The provision of program training and ongoing support for staff responsible for implementing program content is a widely recommended strategy to improve staff knowledge and skills (Meyers et al., 2012; Ulla & Poom-Valickis, 2023). Training is typically made available by the SEL program provider, with the main aim being to provide guidance on how to effectively deliver program content. It is also critical that initial training be followed up with ongoing support during active implementation, for example, via coaching or consultative support and performance feedback (Durlak & DuPre, 2008; Meyers et al., 2012).

Another type of training, recommended in CASEL's theory of action for schoolwide SEL, involves the provision of professional learning on the foundations of SEL (CASEL, 2021a). Although teachers recognize the importance of social-emotional competence for students' learning (Bridgeland et al., 2013), opportunities for teachers to build their SEL knowledge and skills are largely absent from teacher preparation programs in higher education institutions (Schonert-Reichl et al., 2017). As a result, training on the foundations of SEL can be used to fill this gap in teacher preparation and improve their ability to effectively deliver SEL program content. However, no known studies to date have examined whether exposure to this type of training is associated with better implementation fidelity.

Study aims and hypotheses

Overall, little is known about the extent to which school leaders utilize these implementation strategies to support SEL program implementation, as most existing studies involved a few targeted schools, using either single-case experimental designs or qualitative investigations. Furthermore, few studies have examined whether school leader engagement in these strategies according to best practice recommendations predicts implementation fidelity. The first aim of this study is to describe the extent to which school leaders from a diverse range of schools utilize these research-based strategies to support implementation of a widely used universal SEL program, known as Second Step® Elementary and Second Step® Middle School digital programs. Because implementation studies suggest that SEL programs are implemented poorly at scale (Durlak & DuPre, 2008), we predicted that overall, a minority of schools would report engaging in these strategies. Because of the critical role of administrators and implementation teams in carrying out these strategies, we also predicted that schools with higher levels of leader support should be more likely to report engaging in the strategies. Moreover, engagement in the implementation strategies should be concurrently associated with fewer reported barriers to implementation.

A second aim is to examine whether engagement in the implementation strategies, as reported in the fall, predicts schools' implementation fidelity at the end of the school year. Based on previous research (Baffsky et al., 2023; Durlak & DuPre, 2008; Kendziora & Osher, 2016), we predicted that engagement in each of the implementation strategies would be a positive predictor of teachers' fidelity of implementation of the Second Step® digital program, as measured by completion of program lessons over the course of the school year.

Method

Participants

Sampling procedures

The Second Step® digital program was used in a total of 9500 public elementary and middle schools across all 50 states during the 2022–23 school year (defined as starting the program by October 1). The targeted sample size for the current study was 200 school leaders from elementary and middle schools utilizing the program. Previous surveys conducted with users of the program indicated an average response rate of 10%. To achieve the targeted sample size, a random sample of 2000 school leaders was selected and emailed a link to the survey. Stratified sampling was used to achieve an adequate sample of schools from locales (i.e., rural, suburban, town, and urban) and schools serving a range of student demographics (i.e., students identifying as Black, Indigenous, or People of Color or BIPOC; students qualifying for free and reduced-price lunch).

Participant characteristics

A total of 222 respondents completed the survey, representing 11% of the random sample. All respondents provided informed consent to participate in the study. Respondents consisted predominantly of counselors ($n = 82$ or 37%), principals ($n = 73$ or 33%), and teachers ($n = 49$ or 22%) from 166 elementary and middle schools and 132 districts. The schools were located in diverse locales and regions of the U.S., and reflective of the larger Second Step® user population, most were located in the Central, Mountain Plains, and West Coast regions. Most respondents identified as White (75%), were female (71%), and had greater than five years of experience in their position (61%). See Tables 1–2 for additional characteristics of respondents and the schools they represented, including the race/ethnicity of students, qualification for free and reduced-price lunch, and student enrollment.

When using the Second Step® digital program, staff responsible for teaching the program in the participating schools created "classes" which denoted unique groups of students to whom lessons were to be taught. In total, 3633 classes were created by users from the respondents' schools, with the majority of users being teachers. Most of the schools (84%) began using the program in the previous school year (i.e., school year 2021–22), and the remainder (16%) reported using the program for the first time in the 2022–23 school year.

Second Step® digital program

The Second Step® digital program is a classroom-based, universal SEL curriculum for students in kindergarten through grade eight. The elementary program (kindergarten through grade five) consists of 20 lessons, and the middle school program (grades six through eight) consists of 26–27 lessons, depending on grade level (see Supplementary File 1 for lesson topics by unit). Teachers access scripted lessons on a digital platform and lead students through lesson slides using a variety of student-focused instructional practices. Additional information about program training and other resources provided can be found in Supplementary File 1.

Procedure

To address aim one, a survey assessing engagement in implementation strategies was completed by school implementation leaders in October – November of the 2022–23 school year. A $40 incentive was offered for completion of the survey. Additional variables related to demographics of students in the schools were obtained from publicly available datasets or reports (see description below). To address aim two, lesson completion data were extracted from the digital program's Learning Management System (LMS) at the end of the school year.

Table 1
Demographic Characteristics of Respondents.

Variable	*N*	%
Gender		
Female	158	71.2
Male	45	20.3
No response	19	8.6
Race/ethnicity		
African American	16	7.2
American Indian or Alask Native	2	0.9
Asian American or Asian	6	2.7
Hispanic, Latinx, or Spanish origin	14	6.3
Native Hawaiian or Pacific Islander	4	1.8
White	167	75.2
No response	13	5.9
Years Experience		
> 5 years	136	61.3
2–5 years	51	23.0
1–2 years	18	8.1
< 1 year	17	7.7

Table 2
Demographic Characteristics of Schools.

Variable	*M*	*SD*	Range
Student Race/Ethnicity			
African American	11.3%	22.1	0 – 99
American Indian	2.0%	9.6	0–84
Asian	3.9%	8.5	0 – 65
Latinx	23.4%	25.4	0 – 97
White	59.3%	31.8	0–100
Free/Reduced Lunch	49.6%	29.1	0–100
Number students enrolled	506	212	70 – 1169
	N	%	
School Grade Span			
Elementary	95	57.2	
Middle School	33	19.9	
Elementary/Middle	38	22.9	
School Locale			
Rural	39	23.5	
Suburban	54	32.5	
Town	32	19.3	
Urban	41	24.7	
U. S. Territory			
Central	64	38.6	
Gulf Coast	5	3.0	
Mountain Plains	45	27.1	
Northeast	15	9.0	
Southeast	12	7.2	
West Coast	25	15.1	

Measures

Implementation leader survey (see Supplementary File 2)

Implementation strategies. Four survey questions assessed level of engagement in each of the following implementation strategies: (1) communication of a shared vision for SEL, (2) creation of an implementation plan, (3) identification of data to monitor implementation progress, and (4) provision of SEL training to all school staff. These survey items were adapted from the Schoolwide SEL Rubric, which was developed by CASEL based on learnings from the organization's multi-year partnerships with U.S. school districts to inform best practices in the integration of SEL into their environments (CASEL, 2019). For each survey question, respondents selected the response option, ranging from (a) to (d), that best characterized the school's level of engagement in the strategy since the school year started.

An examination of response frequencies for each item indicated that most responses were either: (1) on the lower end of the rubric indicating no engagement or beginning stages of engagement in the strategy, or (2) on the higher end of the rubric indicating engagement according to best practice recommendations. As a result, responses were coded according to binary scores, with 0 indicating either no engagement or beginning stages of engagement and 1 indicating engagement according to best practice recommendations. An exception was SEL training, which was scored on a 3-point scale (0 indicating no training for any staff, 1 indicating training for selected staff, and 2 indicating training for all staff).

Leader support and implementation barriers. To assess administrator support for the program, specifically support from school principals or district administrators, respondents rated the degree to which they felt that administrators were supportive of using the program, using a scale from 1 (not at all supportive) to 4 (very supportive), which was adapted from Kam et al. (2003). If respondents were school administrators (e.g., principal), their ratings of district leaders were used. For all other respondents, school administrator ratings were used. Support from school implementation teams was assessed by asking respondents to indicate whether the school had a team in place to support implementation of the program, and if so, they selected the cadence of the team meetings, with response options being monthly, quarterly, once or twice prior to launching the program, or other (in which case, respondents indicated the cadence). This item was then scored as a binary variable with 0 indicating that teams either did not exist or existed but rarely met, and 1 indicating that teams existed and met on a regular basis (defined as at least quarterly).

To assess implementation barriers, seven common barriers to implementation (e.g., lack of administrator commitment, lack of teacher commitment, lack of funding to support use of program, lack of staff bandwidth to support program) were listed and participants marked all that applied. Responses were scored by summing the number of barriers selected (score range = 0–7). Most respondents reported either no barriers or one barrier, which tended to be either lack of teacher buy-in or a need for teacher training. As a result, this measure was scored as a binary variable, with 0 indicating no barriers were selected, and 1 indicating that one or more barriers were selected.

Program fit and participant demographics. Additional survey items captured perceptions of the program's fit with the school community. Respondents rated their agreement with four statements describing the program's fit with student needs, teacher needs, alignment with school/district goals, and integration with other SEL initiatives (CASEL, 2021b). Agreement was rated using a scale ranging from 1 (strongly disagree) to 6 (strongly agree). Scores on each item were averaged to obtain an indicator of overall program fit, which was used as a covariate in data analyses.

School demographic covariates

School-level student demographics (i.e., student enrollment, percentage of students qualifying for free or reduced-price lunch, and percentage of students by race/ethnicity) along with school locale (rural, town, suburban, urban) were obtained via a data lease from Market Data Retrieval (i.e., MDR Education), which provides validated demographic information aggregated at the building level, capturing 100% of elementary and secondary schools in the U.S. The building-level data in the Second Step LMS were matched with the MDR database. The source of the MDR school locale data is the National Center for Education Statistics (NCES) classification system which is based on a school's physical address. Source of demographic information (student race/ethnicity, participation in free/reduced-price lunch) is also the NCES. For the student race/ethnicity covariate, a measure for the percentage of students who were Black, Indigenous, and People of Color (BIPOC) was created by summing the individual race/ethnicity percentages representing BIPOC students (i.e., Asian, African American, American Indian/Alaskan Native, Latinx). School enrollment data was obtained from state enrollment reports. Finally, the type of Second Step® program utilized (elementary or middle school) was obtained from the program's LMS records.

Outcome measure

Implementation Fidelity. Fidelity of implementation was operationalized according to dosage adherence, which is a structural component of implementation that is essential for effective student learning (Century et al., 2010; O'Donnell, 2008). After teaching each lesson, teachers are prompted to digitally mark the lesson "done" within the LMS. Progress through each slide in a lesson is also tracked in the LMS and if a teacher progressed through all slides contained in a lesson but did not mark it as done, then the lesson was counted as completed. These records of completion were extracted from the LMS at the end of the school year. Dosage adherence was defined as the percentage of lessons completed over the course of the school year (i.e., from August 2022 to June 2023). As shown in Table 3, the average percentage of lessons completed in the study sample was 50%, which is slightly higher than the lesson completion indicated for the larger population of schools that used the program during the 2022–23 school year (i.e., 47%).

Data analytic plan

Aim one

To examine the frequency with which school leaders engaged in implementation strategies according to best practice recommendations,

Table 3
Frequency of Engagement in Implementation Strategies.

Variable	*N*	%
Communication of shared vision for SEL		
0 (No)	57	38.3
1 (Yes)	92	61.7
Creation of an implementation plan		
0 (No)	106	71.1
1 (Yes)	43	28.9
Identification of data to monitor progress		
0 (No)	73	49.0
1 (Yes)	76	51.0
Training on foundations of SEL		
0 (No staff)	37	24.8
1 (Selected staff)	47	31.5
2 (All staff)	65	43.6
Descriptive Statistics for Non-Demographic Measures		
Variable	*Mean*	*SD*
Administrator Support (scale from 1 to 4)	3.74	0.51
Program Fit (scale from 1 to 6)	5.31	0.64
Percentage of lessons completed	50.36	0.29
	N	%
Implementation Team		
No team or team meets infrequently	88	59.1
Team meets on regular basis	61	40.9
Implementation Barriers		
No barriers	22	14.8
One or more barriers	127	85.2

responses to relevant items were first aggregated at the site level. For 15 schools, more than one staff member (ranging from 2 to 16) was identified as an implementation leader and completed the survey. As a result, their ratings were averaged across each item to arrive at a school-level score. For the majority of schools ($n = 151$), only one leader (either a principal or counselor) responded to the survey items. Frequency analyses were conducted to examine overall school engagement in the implementation strategies.

Concurrent associations between engagement in the implementation strategies and leader support for the program and barriers encountered were examined using a partial bivariate correlation analysis, controlling for school demographics (school locale, student enrollment, percentage of students identifying as BIPOC, percentage of students qualifying for free/reduced-price lunch), program type (elementary vs. middle school/both), and program fit scores.

Aim two

Bivariate correlations were conducted to examine potential collinearity among the predictor variables, covariates, and criterion measure, which was confirmed using collinearity diagnostics, specifically large variance inflation factor (VIF) coefficients. A strong positive correlation between the percentage of students qualifying for free or reduced-price lunch and the percentage of students who identified as BIPOC ($r = .70$) was found, and collinearity diagnostics were beyond the acceptable range (i.e., tolerance >.1 and VIF < 5). Because the BIPOC variable was more highly correlated with the outcome measure for aim two (i.e., percentage of lessons completed), this variable was used in the analyses and the free/reduced-price lunch variable was excluded.

Given that the outcome measure used to evaluate aim two was continuous (i.e., percentage of lessons completed), ordinary least squares regression was used to examine variables that predicted lesson completion by teachers at the end of the school year. The following variables were examined as primary predictors: (1) communication of a shared vision for SEL, (2) creation of an implementation plan, (3) identification of data to monitor implementation progress, and (4) provision of SEL training to all school staff. Covariates included in the model were school demographics (school locale, student enrollment, percentage of students identifying as BIPOC), program type (elementary vs. middle school/both), and program fit scores.

Results

In all analyses, schools that were either in their first year of a pilot of the program ($n = 13$) or were implementing with counselors only ($n = 4$) were excluded given that there was no intent to foster schoolwide implementation of the program, resulting in a sample size of 149. Descriptive statistics for non-demographic measures are shown in Table 3.

Aim one: engagement in implementation strategies

As shown in Table 3, the strategy with the highest level of engagement was indicated for communicating a shared vision for SEL to all staff, with 62% of respondents indicating engagement in this strategy. The lowest level of engagement was indicated for schools having an implementation plan that included program goals, action steps, and assigned ownership, with just 29% of school leaders reporting that they had such a plan in place. Less than half of school leaders (44%) reported providing SEL training to all staff. About half of school leaders (51%) reported having identified implementation and/or outcome data to monitor implementation progress.

Concurrent associations with leader support and implementation barriers

The partial bivariate correlation analysis (see Table 4), controlling for school demographics, program type (elementary vs. middle school/both), and program fit, indicated that administrator support was not associated with engagement in any of the strategies. However, implementation team support was positively associated with having: (1) communicated a shared vision for SEL, $r\,(136) = .20$, $p < .05$) and (2) an implementation plan, $r\,(136) = .17$, $p < .05$. Having communicated a shared SEL vision, $r\,(132) = -.26$, $p < .01$, and an implementation plan, $r\,(132) = -.28$, $p < .001$, were associated with encountering fewer barriers to implementation. None of the other strategies were associated with the existence of implementation barriers.

Aim two: predictors of lesson completion

The multiple regression model predicting the percentage of lessons completed across the school year was significant, $F(11,135) = 2.56$, $p < .01$, and explained 17.7% of the variance in lesson completion scores (see Table 5). Of the covariates, student enrollment ($\beta = 0.23$, $p < .05$) was positively associated with lesson completion. Use of the elementary program ($\beta = 0.16$, $p = .07$) was marginally associated with lesson completion. In other words, schools with more students enrolled and schools using the elementary program (vs. middle program or both) had higher levels of lesson completion. Of the implementation strategies, having identified implementation and/or outcome data to monitor

Table 4
Concurrent Associations Among Engagement in Implementation Strategies, Leader Support, and Implementation Barriers.

Variable	1	2	3	4	5	6	7
1. Administrator Support	–						
2. Implementation Team	.03	–					
3. One or More Barriers	-.06	-.15	–				
4/Shared Vision	.10	.20*	-.26**	–			
5. Implementation Plan	.14	.18	-.28**	.42***	–		
6. Data to Monitor Progress	.11	.15	-.06	.26**	.36***	–	
7. Training on SEL Foundations	-.01	.13	-.03	.20*	.06	.16	–

*p < .05, **p < .01, ***p < .001

Note. The following variables were included as controls: School locale (rural, suburban, town, urban), (2) school enrollment, (3) percentage of students identifying as BIPOC, (4) program type – elementary or middle school/both, and (5) program fit scores.

Table 5
Results of Regression Analysis Predicting Lesson Completion.

Parameter	*B*	*p*-value
Locale/Urbanicity (ref = urban)		
Rural	-0.11	.36
Suburban	-0.09	.38
Town	0.04	.72
Program		
(0 = Middle School, 1 = Elementary)	0.16	.07
Student Enrollment	0.23*	.01
Percent BIPOC	-0.05	.62
Program Fit	-0.05	.54
Communication of shared vision		
(0 = no, 1 = yes)	0.11	.22
Creation of implementation plan		
(0 = no, 1 = yes)	-0.03	.74
Identification of data to monitor progress		
(0 = no, 1 = yes)	0.20*	.03
Training on foundations of SEL	0.13	.13

* $p < .05$

progress was the only positive predictor of the percentage of lessons completed ($\beta = 0.20$, $p < .05$). None of the other strategies were associated with lesson completion.

Discussion

In the current study, three implementation strategies emerged as correlates or predictors of the quality of implementation of the Second Step® digital program: (1) communication of a shared vision for SEL, (2) creation of an implementation plan (including program goals, action steps, and assigned owners), and (3) identification of implementation and/or outcome data to monitor progress. The most common strategy reported by school implementation leaders was communicating a shared vision for SEL, and the least common was having an implementation plan. Consistent with predictions, these two strategies were concurrently associated with fewer barriers to implementation of the program. The most frequently cited implementation barriers involved either a need for more commitment or buy-in to the program among teachers or a need for more professional learning to support teachers' SEL knowledge and skills.

Also consistent with predictions, engagement in these two strategies was more likely to be reported when schools had an implementation team that met on a regular basis. Although having administrator support was not associated with engagement in the strategies, this finding could have stemmed from the fact that ratings of school or district administrator support were in the high range for most schools in the study. Thus, in the context of high levels of administrator support, the existence of an implementation team was the predominant correlate of engagement in implementation strategies.

The other two strategies, having identified data to monitor progress and the provision of training on SEL foundations for staff, were not associated with barriers or leader support. The extent to which having data to monitor progress is correlated with the teacher-related barriers reported in the current study may be more dependent on how often leaders regularly share the data with staff (Scaccia et al., 2015), which was not evaluated in the current study. Regarding training on SEL foundations, this measure only captured staff exposure to this type of training, which may not have been a sensitive enough measure to account for variation in implementation barriers. For instance, previous research indicated that teacher engagement in SEL training was positively correlated with adherence to an SEL program (Ransford et al., 2009). As a result, teacher engagement, rather than attendance, may be a more robust indicator of training experience. Additionally, we did not ask about the specific timeframe of any SEL training provided. If the training were provided in previous school years (e.g., before implementation teams existed or under different administrator leadership), then past participation in training may not have any associations with current leader support.

Although having a shared vision for SEL and an implementation plan were concurrently associated with fewer barriers, engagement in these strategies did not predict lesson completion over the course of the school year. It could be that these variables serve a moderating role. For instance, the association between having data to monitor progress and lesson completion may be stronger in the context of schools that also have a vision for SEL and an integrated implementation plan. Due to inadequate power, these moderating relationships could not be examined in the current study. The sole predictor of lesson completion was having identified implementation and/or outcome data to monitor progress. The importance of monitoring implementation progress is consistent with previous studies (for reviews, see Baffsky et al., 2023; Durlak & DuPre, 2008; Meyers et al., 2012), most of which involved qualitative investigations or quantitative studies in which the strategies were facilitated by external implementation consultants. The current study thus provides quantitative evidence that use of this strategy by school-based personnel is associated with better SEL program adherence.

According to implementation frameworks, school leaders should begin engaging in SEL visioning, implementation planning, and identifying data to monitor progress during the pre-implementation stage (i.e., prior to beginning active implementation of new programs), as these strategies help to set the stage for an effective implementation (Meyers et al., 2012). This preparation thus requires setting aside sufficient time to properly engage in the strategies. Based on learnings from CASEL's partnerships with schools to support implementation of evidence-based SEL programs, the last 2 months of the school year appeared to be an ideal timeframe for leaders to properly prepare for SEL programs slated to start the following school year (Meyers et al., 2019). In addition, it is critical that implementation teams continue monitoring and supporting implementation throughout subsequent stages of implementation to foster continuous improvement and sustainability (Meyers et al., 2012).

To support leader engagement in implementation strategies, there are existing implementation support systems, tools, and resources that could be utilized. For example, Getting to Outcomes (GTO) is an implementation support intervention that is designed to build leader capacity to carry out many of the implementation strategies examined in the current study (Wandersman et al., 2000). It consists of manualized tools, face-to-face training, and onsite support for implementation teams. It is also designed to be used with any type of program although there are no known studies of its use in the context of SEL programs. Chinman et al. (2016) examined whether use of GTO improved the fidelity of implementation of a teen sexual health promotion program in youth centers. Compared to a control group of centers that did not receive the GTO intervention, those that did had higher levels of implementation fidelity during their second year of program usage (Chinman et al., 2016). These types of stand-alone implementation support models are thus a promising way to assist school leaders with SEL program implementation.

Implementation support to build leaders' capacity to engage in the implementation strategies examined in the current study can also be embedded directly within resources accompanying SEL programs. For instance, informed by implementation science and findings from the current study, the Second Step® digital program was recently updated with an easier-to-use implementation guide that provides leaders with a step-by-step process for engaging in these key implementation strategies. The guide can be used in a flexible manner, depending on a school's level of readiness, or staff willingness and ability (Scaccia et al., 2015), to implement the program, and includes assessments to gauge staff readiness and tailor implementation to each school's context. An implementation dashboard is also provided, which leaders can use to monitor program adoption and lesson completion in real time, thus allowing them to regularly communicate implementation progress during all-staff meetings and provide teachers with more immediate

implementation assistance or support.

Study limitations and directions for future research

Some limitations of the study should be highlighted. A primary limitation is that the findings are correlational, thus, the direction of effects cannot be confirmed. Future studies should utilize experimental designs to test the effect of implementation strategies (e.g., GTO program or Second Step® implementation guide) on implementation fidelity. Another limitation is related to the external validity of the study's findings. Most of the schools included in the study sample were located in the Central, Mountain Plains, and West Coast regions of the U.S. Schools in other parts of the country (i.e., Gulf Coast, Northeast, and Southeast) had lower representation in the survey, and the findings may not generalize to these regions.

Other limitations involve measurement issues. As previously discussed, staff exposure to training on the foundations of SEL was assessed at a more global level in terms of whether staff had access to the training. Future studies should examine the provision of training in a more in-depth manner, for instance, by capturing staff engagement and the timeframe when staff were trained. These factors may be better indictors of staff motivation and capacity to implement an SEL program.

In addition, the current study did not examine whether school staff completed the Second Step® program training, as these user records were not available in the LMS data capture. Although the program guides teachers to complete the training individually prior to starting the program, completion is not mandatory to gain access to the digital lessons. Given that training is one of the most important variables associated with implementation fidelity (Durlak & DuPre, 2008; Ulla & Poom-Valickis, 2023), future studies should include this variable, along with the other leader-directed strategies examined in the current study, to achieve a more robust model of factors predictive of program adherence. The influence of macro-level factors, such as pro- and anti-SEL state and local policies, were not the focus of the current study, but should also be examined in future studies to better understand how these factors may impact program implementation in schools. Last, the measure of school use of implementation data to monitor progress could be expanded by probing for the types of implementation data utilized and the extent to which data were shared with teachers and used to inform support for teachers. These facets of data use would help to elucidate the most critical types of implementation data (e.g., staff readiness, program adherence, quality of program delivery) needed to support implementation in the short-term and sustain implementation in the long-term.

Impact statement

The findings indicate room for growth in key leader strategies tied to better program implementation, particularly having a shared SEL vision, implementation plan, and data to monitor progress. To improve implementation, district and school leaders should incorporate these practices into their program implementation process. SEL providers should also ensure these strategies are integrated into the program's implementation support resources.

Compliance with ethical standards

Institutional Review Board (IRB) approval was obtained from an independent IRB. Informed consent was obtained from all study participants.

Declaration of Competing Interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: co-author member of this journal's editorial board - Tia Kim.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.sel.2023.100020.

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