



The Sexual Risk Avoidance Education National Evaluation: Using Co-Regulation in Youth Programs

October 2023

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Executive Summary

Introduction

The federal government funds grant programs designed to help youth avoid and reduce the risks associated with early sexual initiation. In 2016, the Family and Youth Services Bureau in the Administration for Children and Families (ACF) began funding discretionary Sexual Risk Avoidance Education (SRAE) grants. ACF awarded Mathematica a contract for the SRAE National Evaluation (SRAENE), a five-year project that started in fall 2018 with goals to: 1) gather information on the design and implementation of SRAE programs, 2) study improving selected program components, and 3) explore the ways federal grantees can use data and evidence to improve SRAE programming.

This report describes results from a study to address the second goal called the Co-Regulation Implementation Study, which examined strategies used to improve the program component of facilitation. We tested a theory that teaching SRAE facilitators co-regulation skills—including fostering warm and responsive relationships with youth, creating a safe and supportive classroom environment, and coaching and modeling self-regulation skills—has the potential to improve youth outcomes. To test this theory, the study team trained facilitators to use a set of co-regulation strategies when delivering their SRAE programming and supported them as they used the strategies. Nine SRAE grantee sites in high school classes took part in the study during the 2022–2023 school year. The study aimed to answer two research questions:

1. Does the use of co-regulation facilitation strategies support improvement in facilitation, including how facilitators respond to training and how well they implement the strategies?
2. Does the use of the co-regulation facilitation strategies support improvement in youth proximal outcomes, and how do youth respond to SRAE programs when facilitators use co-regulation strategies?

Methods

To prepare facilitators to implement the co-regulation strategies, the study team hosted in-person trainings for facilitators and their program administrators. The team collected data from a range of sources and instruments, including surveys filled out by the facilitators themselves, individual interviews with facilitators, classroom observations, youth focus groups, and daily reports from facilitators about their use of the strategies. Throughout the school year, the study team held biweekly coaching calls to provide ongoing support to facilitators as they implemented the strategies and visited classrooms to observe facilitators using the strategies. This report describes how facilitators implemented the co-regulation strategies and shares youth's and facilitators' reactions to them.

Key findings

Overall, facilitators thought using the strategies strengthened their facilitation, improved their ability to connect with students, and helped them build a positive program environment. Youth also reacted positively to the strategies. The study team isolated several factors that helped or hindered the implementation of the co-regulation strategies. Facilitators found that contextual factors such as classroom size, classroom type, session length, and teacher buy-in influenced their use of the co-regulation strategies. Facilitators with more experience in SRAE programs and facilitators with an open mindset used the strategies more regularly. Training and ongoing support encouraged facilitators to personalize the strategies and troubleshoot solutions when challenges arose. Planning, practicing, and using a co-facilitation model also helped facilitators use the strategies with more ease.

Results from the study show the promise of incorporating co-regulation strategies into SRAE programs. Findings shared in this report illuminate how to support facilitators as co-regulators (that is, how to use co-regulation

strategies to support youth development of self-regulation skills) and how SRAE facilitators can use co-regulation strategies to improve delivery of their programs.

I. Introduction

A. Background and Purpose of SRAE Programs

Rates of teenage sexual activity have steadily declined for decades, with a particularly notable decrease of 8 percentage points since 2019 (CDC, 2023; Martin et al. 2021). Birth rates have declined at the same time, yet the United States has a higher rate of births to teenage mothers than any other industrialized country (CDC, 2023; Martin et al. 2021). The federal government funds a range of grant programs designed to help youth avoid and reduce the risks associated with early sexual initiation. For nearly a decade, the programmatic emphasis has been on outcomes that are associated with a delay of sexual activity until marriage. In 2016, the Family and Youth Services Bureau (FYSB) in the Administration for Children and Families (ACF) funded discretionary Sexual Risk Avoidance Education (SRAE) grants for the first time. In 2018, Congress reauthorized Title V, Section 510 of the Social Security Act,¹ replacing the prior Abstinence Education grants with Sexual Risk Avoidance Education grants, which provide money to states to support programs.

SRAE programs focus on personal responsibility and healthy decision making with the goal of encouraging youth to voluntarily refrain from nonmarital sexual activity and other risky behavior. The programs also provide education on topics such as personal responsibility, self-regulation, goal setting, healthy relationships, a focus on the future, resisting drug and alcohol use, and skills for avoiding nonmarital sexual activity.

ACF awarded Mathematica a contract for the SRAE National Evaluation (SRAENE) in 2018 with a goal of identifying strategies that could improve SRAE programs. This includes building grant recipients' capacity to use data for program improvement and to conduct local evaluations. Mathematica is also identifying and testing how improvements to selected program components can improve youth outcomes. Improving the components of SRAE programs is a new endeavor, and no evidence on the subject exists. The first stage of this work was to identify which program component(s) to study. After extensive discussions with grantees, program developers, and key supporters of SRAE programs, the Mathematica study team identified facilitation as a priority area for program improvement.

Program components can include any part of a program, such as:

- Program content
- Facilitation
- Setting
- Dosage
- Supplementary activities

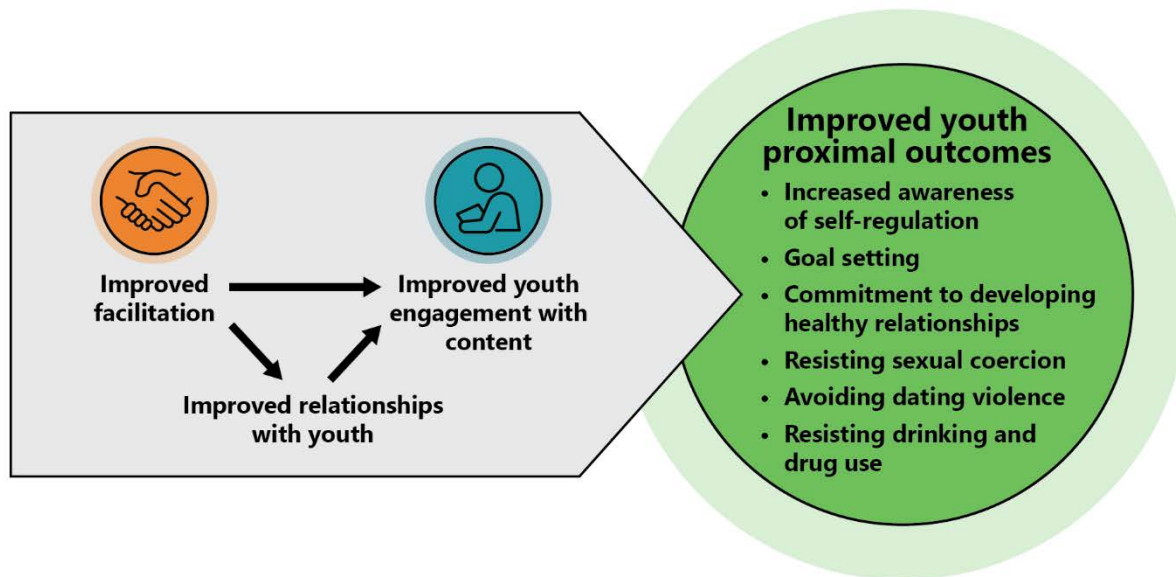
A theory of change for how better facilitation can improve youth outcomes

Creating the conditions that allow youth to engage more with program content may improve outcomes (Carroll et al. 2007). We hypothesized that improving the facilitation of SRAE programs has the potential to improve youth outcomes by fostering a warm and responsive relationship between the facilitator and the students, creating a safe and supportive environment, and having the facilitator model and coach self-regulation skills. For example, if youth feel a genuine connection to the facilitator and regard the classroom as a safe and supportive environment, they might engage more in the program content and activities. Further, coaching and modeling self-regulation skills may

¹ The Title V SRAE Program is authorized and funded by Section 510 of the Social Security Act (42 U.S.C. § 710), as amended by Section 50502 of the Bipartisan Budget Act of 2018 (Pub. L. No. 115-123) and extended by division CC, title III, section 303 of the Consolidated Appropriations Act, 2022 (Pub. L. No. 117-103).
https://www.ssa.gov/OP_Home/ssact/title05/0510.htm.

improve youth outcomes around self-efficacy and their ability to refrain from engaging in risky behaviors. This theory of change predicts that improving facilitation could improve (1) the relationship between the youth and the facilitator and (2) the youth's engagement with SRAE program content. These benefits may lead to better proximal outcomes for youth (Exhibit I.1).²

Exhibit I.1. Improving facilitation to improve youth outcomes



This report describes results from an evaluation of how nine SRAE grantee sites implemented co-regulation strategies during the 2022–2023 school year. Findings from the evaluation provide information on how to support facilitators as co-regulators, how co-regulation is a means to improve facilitation of SRAE programs, and considerations for administrators and facilitators of SRAE programs for incorporating co-regulation strategies.

B. Grounding Co-Regulation in Youth Development

Since 2013, ACF has been conducting research on co-regulation, generating foundational resources, and contributing to both theory and practice.^{3, 4} Another ACF project, Self-Regulation Training Approaches and Resources to Improve Staff Capacity for Implementing Healthy Marriage Programs for Youth (SARHM), developed co-regulation strategies for facilitators that were designed to improve youth self-regulation, and the related resources were a foundation for implementing and testing the strategies at scale (Baumgartner et al. 2019). At the same time ACF selected facilitation as the focal component, the agency released several resources related to the research it has been conducting on co-regulation (Baumgartner et al. 2019; Frei and Herman-Stahl 2021). To further its research goals, ACF selected the co-regulation strategies as the means to improve facilitation in SRAE programs.

² This report will not address changes in youth outcomes. It does share results on improved facilitation and improved relationships and engagement.

³ Office of Planning, Research, and Evaluation. "Co-Regulation and Connection in Human Services: Developing a Learning Agenda." U.S. Department of Health and Human Services, 2022.

<https://www.acf.hhs.gov/opre/blog/2022/03/co-regulation-connection-human-services-developing-learning-agenda>

⁴ [Self-Regulation and Toxic Stress Series | The Administration for Children and Families \(hhs.gov\)](#)

Self-regulation refers to the ways that people coordinate their thoughts, feelings, and behavior to reach their goals (Murray et al. 2019). Self-regulation comprises three integrated components—cognitive, emotion, and behavior regulation.

People who develop self-regulation skills can handle stress, resist seeking immediate gratification, make short- and long-term plans, and solve daily problems (Frei and Herman-Stahl 2021).

Why self-regulation is important during adolescence

Self-regulation develops throughout childhood. Youth experience two key periods of rapid brain growth and self-regulation development—in early childhood and in adolescence. The part of the brain that emphasizes short-term rewards and risk taking develops earlier than the one that prioritizes planning and long-term goal setting. Youth between the ages of 14 and 24 develop faster socially and emotionally, and their personality and identity evolve. Adolescence is an optimal time for adults to support and coach youth because they experience emotional, stressful, or dangerous situations throughout this period (Rosanbalm and Murray 2017).

Greater self-regulation can lead to better flexible attention, working memory, impulse control, and emotion management (Murray et al. 2019). Effective co-regulation by a supportive adult can encourage youth to practice self-regulation skills and learn from their mistakes as they make progress toward their goals. When adults provide co-regulation, adolescents receive support to make decisions that help them lead healthy lives and achieve long-term goals like graduating from college, pursuing a fulfilling career, and developing secure romantic relationships (Grolnick and Farkas 2002; Moffitt et al. 2011; Rosanbalm and Murray 2017).

Co-regulation can support development of self-regulation in youth

Caring adults—such as parents, teachers, and coaches—can support youth’s development of self-regulation skills through a process called *co-regulation* (Murray and Rosanbalm 2017). Adults who engage in co-regulation help youth practice understanding, expressing, and regulating their thoughts, behavior, and emotions in age-appropriate ways (Biglan et al. 2012; Murray et al. 2019; Sbarra and Hazan 2008). Co-regulation integrates three key types of support from adults: (1) building warm, responsive relationships; (2) creating a safe, supportive environment and positive program climate, and (3) coaching youth and providing opportunities for them to practice self-regulation skills (Exhibit I.2). To practice effective co-regulation, adults must also develop their own self-regulation capacity and model self-regulation skills in their interactions with youth (Rosanbalm and Murray 2017; Shonkoff 2012).

Self-regulation refers to coordinating our thoughts, emotions, and behavior

- Cognitive regulation includes impulse control, working memory, problem-solving, perspective-taking, and goal setting
- Emotion regulation includes labeling emotions, distress toleration, self-reflection, changing unhelpful feelings, and practicing empathy
- Behavior regulation includes organization, coping, inhibition, delaying gratification, and resolving conflicts.

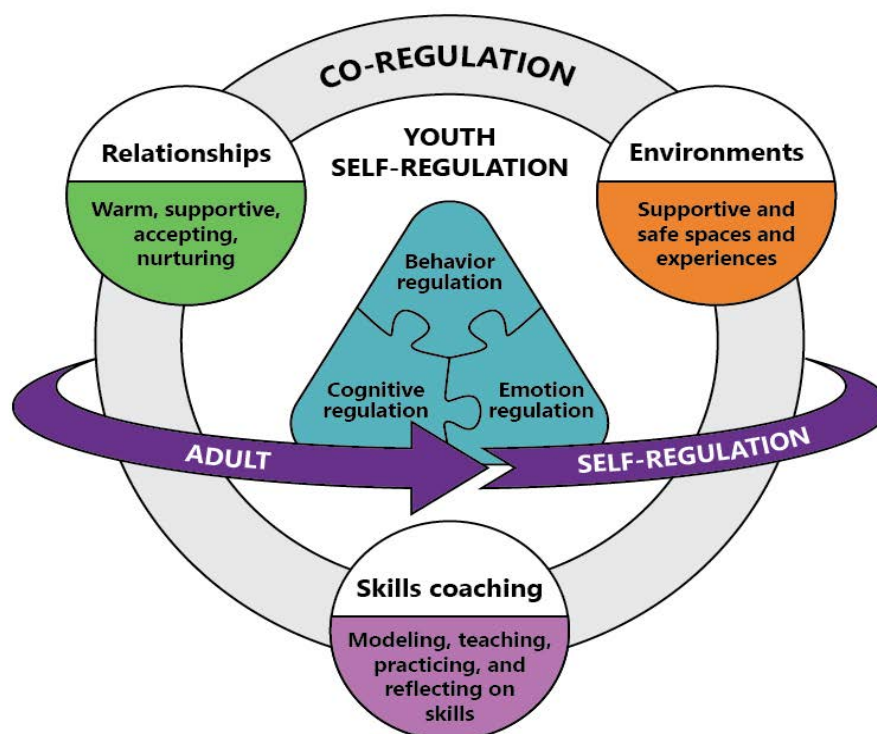
Exhibit I.2. Co-regulation integrates three key types of support

- **Building warm, responsive relationships.** For example, responding to youth with warmth and affection, validating their feelings, offering support, and encouraging compassion for self and others.
- **Creating supportive environments.** For example, collaboratively establishing group norms that promote safety and a positive program climate, offering a space to calm down in times of stress, and prompting youth to use self-regulation skills.
- **Coaching and modeling self-regulation skills.** For example, demonstrating the use of self-regulation strategies, showing awareness, and labeling of emotions, teaching stress management and problem-solving techniques, encouraging youth to seek help when they need it, and supporting goal setting.

Sources: Rosanbalm and Murray 2017; Frei and Herman-Stahl 2021.

Exhibit I.3 is a visualization of how self- and co-regulation processes relate to one another.⁵ The center of the model represents how cognitive, emotion, and behavior regulation make up youth self-regulation. Encircling youth self-regulation are the three domains of co-regulation support shown in Exhibit I.3—relationships, environments, and skills coaching. Adult self-regulation is pictured as a belt because it is central to the quality of co-regulation support and youth's development of self-regulation.

Exhibit I.3. The co-regulation framework



*The evidence-based co-regulation framework is an adaptation of existing models of self-regulation (Murray et al. 2019) and co-regulation (Rosanbalm and Murray 2017).

⁵ The co-regulation framework was modeled on work done on the Self-Regulation Training Approaches and Resources to Improve Staff Capacity for Implementing Healthy Marriage Programs for Youth (SARHM) project (Baumgartner et al. 2019).

How SRAE programs can provide optimal context for co-regulation

The majority of SRAE programs are delivered by facilitators who are hired by SRAE grantees or their chosen providers and are typically external to the school in which the SRAE program is being delivered. SRAE facilitators deliver their program over a period of weeks, often as part of a regular health class. SRAE programs are a conducive environment for using co-regulation strategies. SRAE's authorizing legislation requires that programs focus on helping youth develop self-regulation skills, so SRAE programs foster an environment where using co-regulation strategies is natural.⁶ SRAE program content incorporates opportunities to learn and practice self-regulation within the classroom. In addition, outside facilitators can play a unique role in supporting youth and modeling self-regulation because they are not parents or regular classroom teachers. Prior research on co-regulation has described how self-regulation skills can be deepened when they are modeled and coached by a variety of trusted adults in different contexts (Murray and Rosanbalm 2017). SRAE facilitators provide an opportunity for youth to enhance their self-regulation strategies because they can incorporate into their instruction the three types of support integral to co-regulation: building warm and responsive relationships; creating a supportive classroom environment; and coaching and modeling self-regulation skills (Exhibits I.2 and I.3).

Although SRAE programs cover skills that reflect the components of self-regulation, this project sought to help programs integrate content on self-regulation skills more deliberately and to provide enhanced training for facilitators on how to support youth self-regulation through co-regulation strategies.

II. The Co-Regulation Implementation Study

A. Background

To determine which co-regulation strategies to implement and evaluate in the study, we looked to the SARHM project, which worked with two programs to translate the domains of co-regulation into a range of strategies that could be used when working with groups of youth (Baumgartner et al. 2019; Frei and Herman-Stahl 2021). The study implements and tests six strategies, with a primary focus on three of them, because work conducted on SARHM determined them to be feasible to use within curricular-based programs and provided detailed guidance to support their use (Table II.1).

The study's first goal became understanding whether the existing guidance from the SARHM project would support larger-scale implementation of the three strategies. To assess this, we conducted a proof-of-concept study to learn if SRAE program facilitators could use the three strategies in the classroom after receiving training on them, as well as the level of training and support necessary to support their use of the strategies. For the proof-of-concept study, in January 2022 we trained facilitators at three SRAE programs to use the co-regulation strategies and collected information about the implementation of the strategies throughout the spring semester. (Appendix A provides more details on the proof-of-concept study, including the design and findings.) Through the proof-of-concept study, we determined that these strategies were ready for a larger-scale study assessing their implementation.

⁶ The authorizing legislation for the SRAE grant requires programs to "use medically accurate information referenced to peer-reviewed publications by educational, scientific, governmental, or health organizations; implement an evidence-based approach integrating research findings with practical implementation that aligns with the needs and desired outcomes for the intended audience; and teach the benefits associated with **self-regulation**, success sequencing for poverty prevention, healthy relationships, goal setting, and resisting sexual coercion, dating violence, and other youth risk behaviors such as underage drinking or illicit drug use without normalizing teen sexual activity." (Consolidated Appropriations Act, 2016; P.L. 114-113)

Table II.1. Co-regulation strategies used in this study

Strategy	Description
Welcoming	The facilitator gives youth a worksheet (known as sheet) which youth use to describe how they want the facilitator to interact with them. The facilitator greets each youth personally at each workshop (known as greet). The facilitator checks in with a few youth one-on-one during or after each session to make an individual connection (known as meet).
Praise	<i>Two-part verbal praise:</i> The facilitator provides verbal praise that is personal (that is, using the student's name) and focuses on a specific behavior or effort. <i>Four-part written praise:</i> The facilitator writes students a note that is personal, praises a specific behavior or effort, focuses on the accomplishment and not natural ability, and expresses the value of the demonstrated behavior or effort to the classroom or the community.
Breath to focus	The facilitator teaches youth to use deep breaths to refocus during transitions or times of intense emotion. The facilitator authentically models the exercise for the youth by deliberately inhaling and exhaling at planned times or as needed.

Study design

This implementation study was designed to answer two research questions:

1. Does use of co-regulation facilitation strategies appear to support improvement in facilitation, including how facilitators responded to training and how well they implemented the strategies?
2. Does use of the co-regulation facilitation strategies appear to support improvement in youth proximal outcomes, and how do youth respond to SRAE programs when facilitators use co-regulation strategies?

To answer these questions, we collected data throughout the fall 2022 and spring 2023 semesters from a range of sources and instruments, including facilitator-reported surveys (pre-post training surveys and wrap-up end-of-semester surveys), individual interviews with facilitators, classroom observations, youth focus groups, and daily reports from facilitators about their use of the strategies (Table II.2). Appendix B provides a more detailed description of the implementation study design, and Appendix C describes the data sources and evaluation topics covered by each source in depth.⁷

We selected sites that were delivering the Love Notes SRAE curriculum (Dibble Institute 2021)⁸ in the 2022–2023 school year to high school–age youth in school settings. Love Notes is one of the most commonly used curricula among SRAE grantees, and the goal was to have sites that were using the same curriculum. These parameters ensured consistency regarding the setting and age of youth participants. The study included nine sites with a total of 33 facilitators. These sites were located in the South (6) and Midwest (3) and operated in both rural and urban areas. All sites administered SRAE programming during school hours. The average class size was 18 students (range = 10–28) with four sites having small class sizes (8–15 students) and five having large class sizes (15+ students).

⁷ The Co-Regulation Implementation Study also included an early assessment of impacts on youth proximal outcomes using performance measures data. Appendix B describes the design for the assessment of impacts.

⁸ The selection of Love Notes for this study is not an endorsement of Love Notes by ACF or the study team. This study is not an evaluation of Love Notes. The curriculum has been evaluated and has evidence of effectiveness for improving sexual behavioral outcomes (Barbee et al. 2016).

Table II.2. Evaluation topics examined by data source

Data source	Total number of responses collected	Evaluation topics					
		Training and support	Implementation fidelity	Perceptions of facilitator-youth relationship	Program climate	Youth participation and program dosage	Youth engagement and proximal outcomes
Facilitator surveys	123	X					
Facilitator interviews	50		X	X	X		X
Facilitator logs	1,575		X			X	
Classroom observations	67		X		X		X
Youth focus groups	16			X	X		X

B. Training and Support

To prepare sites to implement the three co-regulation strategies, the study team hosted multiple in-person trainings for facilitators and their program administrators, recognizing both roles were important to support use of the strategies over time. The study team also held biweekly coaching calls to provide ongoing support and troubleshooting and visited programs to observe facilitators using the strategies over the two semesters. This section details the training and ongoing support provided to sites on using the co-regulation strategies.

Facilitator's background and experience

Before trainings began, the study team collected information about facilitators' background and experience. Facilitators varied in their level of experience with facilitation or working with youth, their tenure at their current organization, their experience teaching Love Notes, and their training on self-regulation and related topics.

Most facilitators had more than five years of experience working with and teaching youth. Three were new to SRAE program facilitation when the study started. A little over half of the facilitators (55 percent) had worked for their current organization two years or less. Although many of the facilitators did have experience delivering an SRAE program, about 45 percent reported they had little to no experience teaching the complete Love Notes curriculum. The amount of training facilitators had received on self- and co-regulation before study launch also varied, with about one-third having received training on these topics before the study.

Facilitators attended initial and refresher trainings

The study team conducted the first trainings in person in fall 2022. During the training, attendees learned about self-regulation and its development during adolescence, and how adults can use co-regulation to strengthen self-regulation. The study team explained and modeled three co-regulation strategies—welcoming, positive praise, and breath to focus—discussed how to use the strategies and gave facilitators an opportunity to practice. The study team offered tips for using each strategy and guided facilitators in planning how to use the strategies, including considering potential barriers and solutions. For example, the study team shared tips for memorizing names, an aspect of the welcoming strategy.

In January 2023, the study team held an in-person refresher training for facilitators and program administrators. The goal was to deepen facilitators' understanding of the first three strategies (welcoming, praise, and breath to focus)

and give them opportunities to reflect with their peers on what was going well and what could improve. The refresher training also briefly introduced three additional strategies for facilitators to add to their toolbox as co-regulators (Table II.3). These three strategies were not part of the proof-of-concept work discussed earlier and were not evaluated as part of this study.

Table II.3. Additional co-regulation strategies introduced in January 2023 training

Strategy	Description
Group agreements	The facilitator works with youth early in the program to establish a list of agreements based on the youth's values (e.g., respect and nonjudgment). The facilitator uses the group agreements throughout the semester to hold the group accountable to the values they collectively developed.
Rest & Return	The facilitator encourages youth to take a mental, and if possible, physical break from intense emotions or distractions to refuel, rest, or refocus. It can mean students physically leaving the room, moving to another space, putting their head down, or just taking a mental break. The facilitator explains to youth that they are taking care of their needs by taking a break, and also committing to coming back and reengaging.
Take Note	The facilitator instructs youth to pause to breathe, notice physical feelings or sensations in the body, and connect to the present moment. The facilitator selects a mindfulness exercise that will resonate with youth and models the exercise, helping youth become more aware of the physical impacts their emotions have, which serves as a precursor to emotion regulation.

Following the initial training, facilitators reported an increase in their knowledge about self-regulation (Table II.4).

Table II.4. Knowledge of self-regulation pre- and post-training

Knowledge of self-regulation items <i>Response options: 1= strongly disagree, 2= disagree, 3= neither disagree nor agree, 4= agree, 5= strongly agree</i>	Pre-training Mean (range)	Post-training Mean (range)	Average gain score
I know the domains of self-regulation.	3.2 (1-5)	4.6* (4-5)	1.4
I know how self-regulation develops during adolescence.	3.2 (1-5)	4.4* (4-5)	1.2
I know about factors that impact the development of self-regulation in youth.	3.2 (1-5)	4.6* (4-5)	1.4
I know about the role of adults in supporting the development of self-regulation in youth.	3.7 (2-5)	4.7* (4-5)	1.0
I know ways to teach or support the development of self-regulation skills in youth.	3.2 (1-5)	4.6* (3-5)	1.4

*Indicates change in means from pre- to post-training are statistically significant at $p < 0.01$

¹N=27 participants who completed both a pre-test and post-test

Following the training, facilitators believed they would be able to effectively use the co-regulation strategies in upcoming classes (Table II.5). For example, facilitators felt they would have the needed support to use the co-regulation strategies and felt comfortable using the strategies in upcoming classes. Several facilitators noted that having time to think through implementation of the co-regulation strategies was the most helpful part of the training. One facilitator said, "Working as a team to brainstorm ideas for implementation gave me ideas/confidence to implement and practice on my own." Some facilitators also noted that they found it helpful to collaborate with facilitators from other programs. One facilitator said, "I believe the most useful tool was being able to discuss ideas with groups from different areas of the country implementing with different challenges."

Table II.5. Efficacy in using co-regulation, reported post-training

Response options: 1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, 5 = strongly agree	Mean	Range
	N = 37	
I feel comfortable using co-regulation strategies in an upcoming class.	4.38	4-5
Using co-regulation strategies will improve my teaching.	4.32	3-5
Using co-regulation strategies will make my job easier.	3.86	2-5
Using co-regulation strategies will make my teaching more complicated.	2.55	1-5
Using co-regulation strategies will create more work for me.	3.05	1-5
I will have the support I need to use co-regulation strategies in an upcoming class.	4.47	3-5
I believe using co-regulation strategies could increase youth's engagement with the content.	4.30	3-5

Facilitators received ongoing support

Coaching teams from Mathematica and Public Strategies gave sites and their facilitators ongoing support in the form of coaching calls and site visits to help facilitators master the strategies and address challenges that arose. Coaching teams also met regularly to share lessons learned across sites and troubleshoot challenges as a group.

Each coaching team held biweekly calls with each site. During these calls, coaches helped sites plan where to use the co-regulation strategies during their Love Notes lessons and how to tailor the strategies to their context. Coaches also supported facilitators to reflect on their successes and challenges and identify potential solutions. Through these calls, the coaching team received feedback on the feasibility of using the strategies in classrooms, appreciating aspects of the school context such as class length, size, or the physical setup of the classrooms.

To understand how facilitators used the co-regulation strategies in classrooms, the coaching team visited each site twice per semester. The team observed Love Notes class sessions and documented how facilitators used the strategies, the quality and fidelity of their use, and how youth participated in the class and engaged with the program. The team used information from observations to give facilitators feedback on how they used the strategies and ways they might improve.

C. Implementing Co-Regulation in the Classroom

This section of the report begins with the data on how facilitators used the three co-regulation strategies (welcoming, praise, and breath to focus) in the classroom. We restate each strategy's overarching goal, describe how facilitators used it, and discuss the facilitator's personalization of the strategy and relative comfort with using it. The second half of the section describes how facilitators who used the co-regulation strategies strengthened the overall intentionality of their facilitation. That discussion is followed by a specific illustration of how using the strategies influenced youth via the three co-regulation domains of support (building warm, trusting relationships; setting a safe environment, tone, and positive program climate; and supporting development of youth's self-regulation skills through modeling and coaching).

How facilitators used co-regulation strategies in the classroom

Welcoming

The goal of the welcoming strategy is to connect with youth on a personal level through three activities: sheet, greet, and meet. The majority of facilitators used the sheet component with each new cohort of youth during the first lesson, although some introduced the strategy at a later point in the program. The coaching teams observed most facilitators using the greet strategy with the majority—but not all—youth at the beginning of a lesson. Facilitators conducted meets with an average of four students per class (Exhibit II.1). One facilitator talked about personalizing this strategy by introducing the welcome sheet on the first day and asking students to share their favorite song, using these to curate a playlist for the semester. Another facilitator described handing out workbooks to each student personally to connect the names on the workbooks with the student and take a moment to meet that student. Most facilitators reported that the welcoming strategy was the easiest and most comfortable of the three to use.

Praise

The goal of praise is to acknowledge positive behavior in the classroom. Across the sites, most facilitators typically gave one or two students verbal praise in each lesson, and many facilitators said they were comfortable giving out verbal praise. On average, facilitators gave one four-part written praise note per class (Exhibit II.1).

For some facilitators, incorporating four-part written praise was more challenging than verbal praise. Constraints at the school level meant two of the nine sites were unable to use the written praise strategy. One site had concerns that written praise could be misinterpreted by youth, particularly if it came from a facilitator of the opposite sex. The other site's superintendent did not approve use of the written praise strategy. However, some sites elected to distribute notes to each student during the last class instead of giving fewer of them out throughout the program. Over the course of the study, most facilitators grew more comfortable providing written praise, and many reported that youth were enthusiastic about receiving written praise. Some sites personalized this strategy by, for example, using a tracking sheet for each class to ensure all youth received verbal praise. One other site created cards branded with their organization's logo, with space for facilitators to write their written praise and hand it out alongside goody bags. Preparing ahead like this helped these facilitators give four-part praise without taking class time to write it out.

Three co-regulation strategies and their corresponding activities

1. Welcoming

- *Sheet.* A worksheet (known as sheet) that youth use to record how they want the facilitator to interact with them.
- *Greet.* The facilitator greets each youth personally at the beginning of each session.
- *Meet.* The facilitator makes an individual connection during or after each session.

2. Praise

- *Two-part.* Verbal praise that is specific and uses the youth's name.
- *Four-part.* Written praise that is specific, uses the youth's name, focuses on an achievement, and ties the effort to the larger picture.

3. Breath to focus

- Coaching in the use of deep breathing during transitions or times of intense emotion.

Breath to focus

The goal of breath to focus is to demonstrate and practice a self-regulation technique. On average, facilitators reported using breath to focus at least once per class (Exhibit II.1). During observations, most facilitators used breath to focus after a transition between lessons or activities. Some facilitators also used it to give students space after discussing heavy or difficult topics.

Most facilitators reported that breath to focus was the most challenging strategy to implement. Many facilitators had concerns initially about how the youth might react, and they lacked confidence in using the strategy. It often took facilitators a substantial amount of time to become comfortable using the strategy themselves and modeling it authentically for the youth. However, personalizing the strategy helped most facilitators integrate it into the lesson. One facilitator described leading breath to focus by incorporating visualizations of a place the youth find peaceful, whereas another told a personal story when introducing the strategy to the youth. One facilitator shared, “You want it to feel natural, and you want it to feel applied to that moment.” Facilitators who found it easy were able to integrate it early in the program, so students expected it each lesson and were more willing to participate. One facilitator who reported practicing the strategy and using it in their personal lives said they felt more comfortable using it with the youth over time. Some facilitators also reported that the students’ comfort level with breath to focus increased as their own comfort improved, and as students had the chance to practice the strategy.

Exhibit II.1. How most facilitators used co-regulation strategies

 Sheet: Facilitators all tried using the sheets and found them useful. Meet: Facilitators met one-on-one with about four students per class. Greet: Each class, facilitators greeted most—but not all—youth.	 Two-Part Praise: Facilitators gave verbal praise to one or two students per class. Four-Part Praise: Used by seven of nine sites; facilitators gave out one written praise note per class, on average.	 Use: Facilitators used breath to focus at least once per class. Breath to focus was used during transitions between lessons or activities.
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Using co-regulation strategies helped facilitators be more intentional

Facilitators reported that the co-regulation strategies helped them be more intentional about when and how they interacted with youth. They believed this intentionality, particularly as they focused on building relationships with the youth, made them better facilitators. Several facilitators stressed how intentional relationship building helped make the connections they were establishing with the youth feel more genuine.

An example of increased intentionality that some facilitators reported is that before the training, they often praised students in a general way, by saying “Good job” or “Nice work.” After learning the two-part verbal praise strategy, they worked to make praise both personal and specific. For example, one facilitator praised students by using their name and highlighting how they spoke during class. Many facilitators observed notable differences in how youth responded when praise was implemented with intentionality. One facilitator described the use of praise as “an intentional dialogue that promotes and encourages identity and relationships.” Another facilitator described how

their intentional approach to welcoming helped build trust and rapport with youth. “[Welcoming] definitely helped me be more intentional with the time that I was taking to talk to the kids—the time that I was taking to build those relationships with them. Just making sure that I took the time ... with each student at some point to have a one-on-one conversation with them.”

Facilitators as co-regulators and their influence on youth

This section of the report describes how facilitators acted as co-regulators in the classroom by building warm, trusting relationships, establishing a safe tone and positive program climate, and supporting youth in developing their self-regulation skills.

Building warm, trusting relationships

Facilitators and youth consistently described how using the co-regulation strategies helped them build warm and trusting relationships. Most facilitators said the welcoming strategy was an important tool in their work to build relationships. Meets, greets, and sheets were used to individually connect with students and learn more about them. One facilitator talked about how the sheets helped them learn students’ names and their likes and dislikes, which they were able to incorporate into their teaching. For example, students listed their favorite songs, and the facilitator played those songs as youth entered the classroom. This facilitator said this nurtured a positive connection. Some facilitators also stressed the importance of using the sheet to allow students to share information they would normally hesitate to reveal. For example, students could tell the facilitator they did not want to be put on the spot to answer a question in front of the class. Most youth also appreciated how their facilitators made an effort to get to know them through meets. It made them feel cared for as individuals when facilitators followed up on topics they discussed previously.



[Welcoming] helped on my end, too. It helped me feel more comfortable talking to them as well... having that time to really focus on building a relationship with them.

—Facilitator

Some facilitators also mentioned praise as a key strategy in building relationships. They said that praise (both two-part and four-part) helped to draw positive attention to students in ways they may not experience in their daily lives. One facilitator emphasized how powerful praising students in front of their peers can be, particularly for youth who only get attention when they are being disciplined: “Sometimes you don’t ever hear your name unless you’re in trouble. And so, to [give praise], even if they do something little ... [taking] the time to do [praise], and to call them out loud in front of everybody, they have a tiny little bit of a spotlight that they never had.” At several sites, youth said that when facilitators used their names, it communicated that they cared about them as individuals. One youth said, “Knowing people’s names and, you know, calling them out by name or making a point to kind of greet them ... it seems she was very genuine in caring about you.”



It’s getting to know the people. You’re more comfortable with seeing them around. So, they don’t really feel like exact strangers. But how they go around speaking to us privately sometimes, trying to make conversations, that’s what made it easier. They’re trying to gain your trust. I feel like I can trust them.

—Youth

Most facilitators also discussed the importance of making their interactions sincere and grounding relationships in authenticity. Youth described positive relationships with the facilitators who approached them without judgment. One youth shared, “I feel like I could tell her anything about my personal life, and she’s not about to sit there and judge me about it.” Many youth also appreciated when facilitators were relatable and open—for example, by sharing their personal stories on a particular topic. One youth said, “[The class felt] really open, especially because the leaders were ... also

sharing parts of their personal lives, so that made it so more people felt more open to share their things.” Facilitators reported that at the beginning of the program, many youth were closed off. However, after using the co-regulation strategies to build authentic and caring relationships, the facilitators reported youth were more open to learning, participating more often, and better engaged with the program content.

Setting a safe environment and positive program climate

Facilitators described how the strategies helped them create a positive environment where youth felt safe expressing themselves, asking questions, and being open. One facilitator noted, “Any time you’ve got a learning environment where people feel welcomed and validated, then the material is going to mean more to them.”

Youth had similar reflections, noting that the classroom environment was “safe,” “a positive space,” and had “a happy, uplifting tone.” Many youth credited their facilitators with setting that tone. Further, the relationships that facilitators worked to build had a significant impact on the way youth felt in their environment. For example, one student said, “It’s a comfortable environment because not only is it just because she knows us so well, but because we know her. She didn’t build this brick wall of her life like, ‘I’m just your teacher, that’s all you are going to look at me as.’”

Some facilitators cited breath to focus as being particularly helpful in setting the tone or the mood of the class. One facilitator said, “It goes back to the environment thing. Some topics that may feel kind of uncomfortable, or maybe they come in that day, and they don’t really feel like they’re in the space to be in that class. Once you do breath to focus, it helped them be more prepared for what we were doing that day, just in a better space for it.” Both facilitators and youth perceived breath to focus as supportive of the learning environment and helping youth to regulate their emotions. One student said, “She would ask us to stand up, breathe in, hold it, breathe out. And then we’d just sit down. Everybody was just quiet and calm, and there was tension in the room no more.”

Youth frequently reported they felt welcome in the classroom, and that the welcoming environment was established from the beginning. Many facilitators said using the welcome strategy helped the classroom environment, particularly the use of meets. When facilitators made a conscious effort to get to know their students, it helped to create a mutually comfortable classroom environment and allowed facilitators to open up to the youth as well.



It 100 percent impacts engagement. The more co-regulation strategies I do, the more engagement I have ... by and large, I feel like if I am handing out notes, if I’m giving more two-part praises, if I’m meeting them at the door, especially if I’m doing the one-on-ones, then I am going to have more engagement in the classroom.

—Facilitator



[Welcoming] helped me take time to focus on the kids and what they had going on and really taking time to talk to them. [The Meets] helped me focus on them, and I think it helped the classroom environment a lot because they were able to become more comfortable with me being there and getting to know me a little bit more.

—Facilitator

Supporting development of youth’s self-regulation skills through modeling and coaching

Facilitators supported youth to help develop and practice their self-regulation skills. Some facilitators noted that they used the different co-regulation strategies to help youth manage difficult feelings and emotions. For example, several facilitators mentioned they would use breath to focus before or after lessons when they discussed potentially sensitive topics.

Many youth also talked about how their interactions with facilitators helped them manage situations when emotions were high. For example, one student said breath to focus helps “to not get mad” and that it “helps calm you down.” Another student talked about how the strategies could be something they use in the future outside of class to regulate their emotions: “They gave us tools to realize if you're overreacting, to go through your emotions and to know where they're coming from. So, I think that would help me in the future if I'm overreacting. I can reflect on the emotions like how they taught me and know if I need to communicate them or not.”

Many facilitators credited specific co-regulation strategies as being useful tools during times of dysregulation and discussed how using co-regulation made youth more likely to participate and stay engaged. One facilitator said, “I think by our persistence and our intentionality in the way that we approach using the strategies, there's been some change in some of the students' behaviors overall. Anxiety has gone down. Their engagement level, overall, has turned up. Getting them up in the groups and being creative with some of our lessons and activities. You begin to see them flourishing.”



I think it will help me make better decisions when it comes to not only relationships but actual sexual parts of the relationships. Like what not to do while still in high school and refraining from having sex in high school. Because I don't want anything to happen or to get anything. I just want to focus on schooling and my future.

—Youth

Some facilitators described ways they were able to support youth because they understood the self-regulation process better. As one said, “There are dysregulated moments too ... either we take a rest, and we can assess if we should continue, or maybe [we shouldn't]. And so not seeing those moments as like, a failure, but more of like, that's okay. That's part of this process with regulation.”

Finally, many youth described how participating in the class helped them set goals. Across several focus groups, youth said their interactions with facilitators helped them reassess what they want in a relationship and how to better plan for their future. One student said “It definitely helped us understand what we want in a relationship ... also, what we want for our future. How we should plan our future.”

D. Lessons Learned

The Co-Regulation Implementation Study sought to answer two primary research questions:

1. Does the use of co-regulation facilitation strategies support improvement in facilitation, including how facilitators respond to training and how well they implement the strategies?
2. Does the use of the co-regulation facilitation strategies support improvement in youth proximal outcomes, and how do youth respond to SRAE programs when facilitators use co-regulation strategies?

The findings show that facilitators responded to training with increased knowledge of self-regulation and co-regulation and increased comfort in using the strategies, particularly with the ongoing support provided by coaches to implement co-regulation strategies in the classroom. As a result of this preparation and coaching, most facilitators used the co-regulation strategies regularly in the classroom. More specifically, all facilitators used the ‘sheets,’ they conducted approximately four meets per class, greeted most of their students each class, and delivered on average one to two verbal praises, one written praise, and one breath to focus per class. Further, the results show how use of the co-regulation strategies helped facilitators become more intentional with their facilitation. Youth reported how use of the co-regulation strategies influenced how they communicate with their

friends and partners, problem solve and make decisions, and overall helped them to be more committed to having health relationships.

A broader goal of this study was to identify factors that influenced facilitators' uptake of, continued use of, and comfort with using the strategies during the study. This section of the report describes the factors that made it easier to use the strategies and the factors that made it challenging. SRAE sites interested in supporting facilitators to become co-regulators can consider how to apply these lessons in their own contexts.

Factors that enabled implementation of the co-regulation strategies

Facilitators' years of experience influenced uptake and continued use

Facilitators with more overall experience (with both SRAE and non-SRAE programs) used the strategies more regularly in the classroom. Sites with facilitators that had two to five years of experience implemented the strategies more often and with greater comfort than sites whose facilitators had one to two years of experience. This may be because more experienced facilitators were already comfortable with basic facilitation techniques such as engaging students, managing the classroom, delivering the program, had experience being a nonparental, trusted adult for youth, or created safe learning environments in previous youth classrooms.

Training and ongoing support promoted personalization of strategies and troubleshooting

Initial training and ongoing support fostered use of the co-regulation strategies. Facilitators gave positive feedback on the training sessions, saying they provided foundational information on the concepts of self- and co-regulation and helpful instruction on how to use the strategies in the classroom. Facilitators also shared that ongoing coaching helped them troubleshoot problems throughout the semester and identify ways to personalize the strategies and optimize their use in the context of their school and classroom.

Some facilitators shared during interviews that simultaneous training in the SRAE program content alongside the co-regulation strategies could be a better way to support facilitators as co-regulators moving forward. They said this kind of training approach could help situate the concept of co-regulation as a key component of SRAE programming overall. Simultaneous training could set up the co-regulation strategies as an area of required content and skill development and not a separate or optional aspect of SRAE program delivery. They also suggested creating peer-based opportunities for SRAE facilitators to share successes and troubleshoot challenges, which could promote faster uptake and more use of the strategies over time.



I was new with all that [comes with teaching SRAE], so I was trying to get my footing with teaching, and then there were these strategies that I needed to implement, too. And I think it just all kind of muddled together, and I wasn't quite as confident [in using the strategies].

—Facilitator

Planning, practice, and use of a co-facilitation model helped facilitators be prepared

During the trainings and coaching calls, the study team provided time for sites to plan how and when to incorporate the strategies into each lesson in the Love Notes curriculum. One facilitator appreciated this process because they didn't have to decide "on the fly" when to use the strategies. Some sites incorporated cues for when a strategy would be appropriate to use by annotating their program guide or adding prompts in their PowerPoint slides.

In addition, facilitators discussed the importance of practicing the strategies before trying them in the classroom, for example, by role-playing with colleagues. Facilitators emphasized how developing a script and rehearsing a strategy before entering the classroom made their introduction of the strategies feel more natural. Facilitators reflected that repeated use of the strategies across different classes made them more comfortable using them.

Some participating sites used a co-facilitation model. One facilitator was primarily responsible for Love Notes content delivery, and the other was responsible for using the co-regulation strategies (such as tracking delivery of praise, conducting meets, and writing four-part praise). Other sites had just one facilitator per lesson, who was responsible for content delivery and use of the co-regulation strategies. In a co-facilitation model, facilitators used a greater range of the strategies and reached more students more often with the strategies. In the latter, facilitators were often pressed to just get through the entire lesson and had less capacity for using the co-regulation strategies.



I would tell [facilitators new to the strategies] to practice them first. If I just go into the classroom and say, "Hey guys, we're going to do a deep breath together" [without planning a script beforehand], it's going to come off awkward and weird ... So always practice what you're going to say beforehand.

—Facilitator

Facilitators with an open mindset appeared more committed to using the strategies

Facilitators that demonstrated openness and willingness to try the co-regulation strategies at the beginning of the study had more rapid uptake and sustained use of the strategies over time. Facilitators who were able to overcome their initial discomfort with change were more successful using the strategies than facilitators who expressed doubts at the beginning or did not seem committed to using the strategies after the training. One facilitator initially wondered how she would get the students to use the breath to focus strategy; but after trying it and seeing it refocus students, she was excited to continue using it. Hearing about colleagues' success using the strategies during coaching sessions encouraged uptake of the strategies by more tentative facilitators.



This has really changed our mindset on how we approach these kids. Our mindset went from, we need to deliver this curriculum... to we need to build relationships with these kids. We just changed our mindset on the way we went in [to classrooms] with the intention to find out what every kid was into [and interested in] ... That's what they're craving. That's what they need.

—Facilitator

School context sometimes made it challenging to implement the co-regulation strategies

Facilitators noted that contextual factors—such as class size, classroom type, session length, and teacher buy-in— influenced their use of the co-regulation strategies. Larger class sizes made it challenging to connect with individual students to conduct meets and deliver personalized two- and four-part praise. For instance, one facilitator said it was impractical to use the welcome sheet with a class of 150 students in the gym, because they couldn't match each student to their appropriate sheet. Other schools had overcrowded classrooms, a shortage of desks resulting in students having to stand, and multimedia that required rooms to be rearranged ahead of time. In these schools, it was difficult for facilitators to use the strategies—particularly greet and meet, which require physical space to interact with students.

Facilitators thought the length of sessions and the amount of content they needed to deliver per session influenced use of co-regulation strategies. Across programs, class periods varied from 50 to 90 minutes in length. Some facilitators noted that longer class periods provided more opportunity to implement the strategies, because they

had more time to greet students at the beginning of class, engage in one-on-one conversations, and write praise notes. One facilitator thought the co-regulation strategies worked better in longer classes because they had more time to maintain fidelity to the Love Notes curriculum and “be true to the intent of the co-regulation strategies.” Facilitators found that shorter class periods were often filled with Love Notes lecture content and gave them less time to use the co-regulation strategies.

Facilitators said buy-in from classroom teachers helped them use the strategies more regularly with students. In classes with supportive teachers, facilitators were able to implement lesson content, use the co-regulation strategies, and manage the classroom dynamic. Less supportive teachers detracted from strategy use by preventing the lesson from starting on time, calling out students for behavioral issues, disrupting the class by walking in and out, or playing music. Some facilitators noted that teachers were interested in learning more about the co-regulation strategies after seeing them used, and this interest signaled their buy-in and support.

E. Next Steps

The Co-Regulation Implementation Study suggests that (1) the co-regulation strategies are feasible to implement at a large scale, (2) facilitators can implement the strategies with fidelity, and (3) the strategies improve the classroom environment and the relationships between facilitators and youth. Building from this study, future research could use an experimental design to assess the impact and implementation of training SRAE facilitators on co-regulation strategies, aligned with the theory of change (Exhibit I.1). Future research may also explore whether other co-regulation strategies help facilitators to become effective co-regulators. This study trained facilitators on a set of co-regulation strategies deemed feasible and ready for implementation, based on prior work (see Background and Appendix A). However, these are not the only strategies that facilitators may use to foster co-regulation among youth in SRAE programs. Thus, future research could explore what other content and skills development among facilitators may be utilized to support the use of co-regulation strategies within SRAE programs.

To complement results from this implementation study and support further use of co-regulation strategies, the SRAENE team is developing several resources for practitioners. This includes a series of video-based learning modules on the co-regulation strategies included in this study. A set of tip sheets will accompany the learning modules to offer suggestions for using the strategies in classrooms.



There are going to be differences in every single setting; the students are going to be different, the student dynamics are going to be different. All of these little variables really do play a part. But even that aside, there are ways that we can incorporate these things [the strategies]. They might look different, but they can still be incorporated... they have to be worked with to see where they fit.

–Facilitator



Having the teacher say, “I love the breath to focus,” and cueing, “Do you need to take a breath? Let’s take a breath together,” has also really helped. When the teacher is in the room, when they see that we’re doing it, I think it gives them good ideas... [for] their own classrooms, which I think is the most beneficial. Because we’re only in the classroom to three to four weeks... incorporating the teachers into it [using the strategies] would really make it more long-lasting.

–Facilitator

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Appendix A

Proof-of-Concept Study

The first step in evaluating the co-regulation strategies was to conduct a proof-of-concept study to assess whether facilitators not involved in the initial development of the strategies could feasibly be trained in and use the strategies. In SARHM, two youth-serving programs had previously used the co-regulation strategies; however the primary purpose of SARHM was to inform the development of the co-regulation strategies. The proof-of-concept study initiated work around replication.

Recruiting and selecting sites

We recruited three sites for the proof-of-concept study. To participate, each site had to rely on outside facilitators to use Love Notes in delivering its Sexual Risk Avoidance Education (SRAE) program in high schools. Staff also had to have undergone training in and implemented the SRAE program for at least one semester before participating in the study.

Training

The co-regulation training took place January 10–11, 2022, with 22 facilitators, project directors, and other staff from the three sites. During the training, facilitators learned how co-regulation helps youth develop self-regulation skills and how to implement three co-regulation strategies in their classrooms (welcoming, positive praise, and breath to focus). To help them understand and adopt the strategies, the facilitators had opportunities throughout the training to role play and practice with their team.

Rapid learning approach

We used a rapid learning approach to guide the proof-of-concept study and to determine facilitators' uptake of the strategy following training. Rapid learning encompasses a collection of methods for quickly and iteratively testing program improvements, implementation, or impacts (Holzwart et al. 2019). For this proof-of-concept study, our approach to rapid learning involved periods of implementation (referred to as learning cycles) followed by a period of refinement.

Each site participated in one or two learning cycles that lasted about four to six weeks. During the implementation phase, sites participated in data collection activities to learn more about the uptake and use of the strategies (Table A.1). Immediately following the implementation cycle, the refinement period focused on exchanging key findings with sites and determining whether additional coaching or training would help facilitators use the strategies in the classroom. Sites progressed through learning cycles based on their implementation schedules and uptake of the strategies, which varied. Given that many sites finalized their implementation schedules well into the semester, we were unable to schedule more than one site visit per site. Initially, we had planned to conduct youth focus groups during the second site visit; however, with the scheduling challenges and unexpected staffing changes at some organizations, we were unable to conduct focus groups with youth.

During each learning cycle, we focused on five topics related to implementation: (1) training and ongoing support, (2) feasibility, (3) adaptations, and (4) program climate. Through the process of implementation and refinement, we were able to determine whether it was feasible for facilitators to integrate the co-regulations strategies into their teaching and whether facilitators made improvements in implementation across the two learning cycles.

Table A.1. Learning cycles and goals

Learning cycle	Goal of cycle	Data collection methods and activities
Implementation Cycle 1 (4–6 weeks)	Explore how facilitators apply the knowledge and skills from the training and identify additional areas of support or refinement for successful implementation.	- Conducted virtual biweekly monitoring calls. - Conducted in-person site visit during which we observed each facilitator in the classroom at least once and interviewed each facilitator individually. Because of program implementation schedules, we were unable to schedule a site visit to the third site.
Refinement Cycle 1 (2–4 weeks)	Determine refinements to the training content and other solutions for addressing barriers to implementation with fidelity.	Conducted a virtual meeting using a human-centered design approach and tools, such as Mural, to interpret data and identify refinements.
Implementation Cycle 2 (4–6 weeks)	Explore how facilitators apply refinements from Cycle 1 and continue to identify additional areas of support or refinement for successful implementation.	Conducted virtual biweekly monitoring calls.
Refinement Cycle 2 (2–4 weeks)	Determine refinements to the training content and other solutions for addressing barriers to implementation with fidelity.	Engaged sites in interpreting data and collaborated on refinements and next steps.

Key findings

Overall, across the three sites, implementation of the co-regulation strategies differed by facilitator and by site. At one site, each facilitator was able to implement each strategy. However, frequency differed across the facilitators, particularly in distributing written praise. Another site implemented welcoming and verbal praise throughout its classes with youth, but only one facilitator at that site used breath to focus during class sessions, and only a few facilitators distributed written praise notes. At the third site, facilitators used all three strategies, although with limited opportunities to do so. The study team had had limited communication with the SRAE team at this site after they experienced challenges in identifying schools to deliver Love Notes.

In Table A.2. we describe key takeaways across each of the four topics of interest. In the absence of focus groups with youth, we are limited in our understanding of program climate.

Table A.2. Proof-of-concept study: key takeaways

Topic	Key takeaways
Training and support	Facilitators understood how to begin using the strategies after training. Ongoing support was useful for facilitators as they became more familiar with the strategies and more comfortable using them.
Feasibility	Facilitators were able to implement and integrate the strategies into their teaching, and the process became easier over time.
Adaptations	Facilitators would benefit from additional examples, particularly in how to use breath to focus and positive praise.
Program climate	Facilitators thought youth responded favorably to co-regulation strategies used in the classroom.

Training and ongoing support

In analyzing results from the pre-post training survey, we found that facilitators reported that their knowledge on several training-related topics was higher post-training versus pre-training (on average, they said that they were somewhat knowledgeable before the training and knowledgeable after the training; Table A.3). Facilitators also reported feeling comfortable and confident using the co-regulation strategies they learned during training (Table A.4).

Table A.3. Knowledge of training-related topics (change from pre-training to post-training)

	Pre-test mean (range)	Post-test mean (range)	Average gain score
	N = 15	N = 13	
I know the domains of self-regulation.	2.21 (1–3)	3.62* (3–4)	1.41
I know how self-regulation develops during adolescence.	2.00 (1–3)	3.54* (3–4)	1.54
I know about factors that impact the development of self-regulation in youth.	2.36 (1–4)	3.67* (3–4)	1.31
I know about the role of adults in supporting the development of self-regulation in youth.	2.29 (1–4)	3.62* (3–4)	1.33
I know ways to teach or support the development of self-regulation skills in youth.	2.29 (1–4)	3.62* (3–4)	1.33

Note: 1 = no knowledge, 2 = somewhat knowledgeable, 3 = knowledgeable, 4 = very knowledgeable.

*Indicates means are statistically significant at $p < 0.01$

Table A.4. Comfort and confidence in implementing the strategies, reported post-training

	Mean	Range
	N = 13	
I feel comfortable using co-regulation strategies in an upcoming class.	3.62	3–4
Using co-regulation strategies will improve my facilitation.	3.69	3–4
Using co-regulation strategies will make my job easier.	3.54	3–4
Using co-regulation strategies will make my facilitation more complicated.	2.23	1–4
Using co-regulation strategies will create more work for me.	2.23	1–4
I feel like I will have the support I need to use co-regulation strategies.	3.54	3–4
I believe using co-regulation strategies could increase youth's engagement with the content.	3.69	3–4

Note: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree.

We also found that, on average, facilitators reported high satisfaction with the training and its delivery. During interviews, many facilitators said that they appreciated some aspects of virtual training but would have preferred in-person training. Facilitators from one site said that the regular check-in calls were helpful in working through implementation challenges and that they appreciated the ongoing support after training.

Feasibility

Each site reported roadblocks to full implementation. We regularly discussed sites' successes and worked to troubleshoot the challenges identified in the monitoring calls. In Table A.5, we summarize takeaways on the feasibility of the co-regulation strategies by site. Each strategy included unique implementation challenges.

- **Welcoming.** We learned that facilitators felt most comfortable with the welcoming strategy. However, they noted logistical challenges in completing all aspects of this strategy. For example, the greet aspect encouraged facilitators to greet each student entering the classroom; however, facilitators pointed out they sometimes enter the classroom at the same time as students and must immediately set up for class.
- **Two-part verbal praise.** Facilitators reported that two-part verbal praise felt natural and was easy to incorporate into their classes, as they were offering praise even before participating in training. However, during observations, we noticed that facilitators could use additional support in delivering verbal praise. Although we observed many facilitators providing verbal praise, we noticed that the praise was often general and directed at small groups of students, not at individuals. Facilitators also tended to focus on praising youth's attributes, opposed to their self-regulation skills, which is an important element of the two-part verbal praise strategy.
- **Four-part written praise.** Many facilitators struggled to make time to write praise notes. For example, facilitators at one site said that their other job responsibilities made it difficult to make time to write notes after sessions. They also did not think it was feasible to write notes mid-lesson. The amount of time that facilitators dedicated to writing praise notes also varied. For example, one facilitator, while very thoughtful in writing notes, reported that each note took about 30 minutes to write, a practice that was not sustainable.
- **Breath to focus.** Facilitators lacked confidence in introducing and using breath to focus, and some facilitators chose not to use this strategy. At one site, facilitators reported that they saw the value of the technique, both for youth and for themselves, to reset during class.

Table A.5. Strengths and challenges of integrating co-regulation strategies

Strategy	Strengths	Challenges	Approach to addressing the challenge
Welcoming	Facilitators at one site reported positive feedback from using the welcome sheet; they were surprised at how seriously the students took it and said it helped them get to know students better and more quickly. At another site, the classroom setup made it easy to greet students as they entered the classroom. Facilitators see this strategy as a way to get students into a learning mindset.	At one site, some facilitators struggled with memorizing students' names and did not make the greeting personal. Facilitators were stretched for time in delivering the Love Notes curriculum and struggled to find time to do a "meet" during class. Often, facilitators were unable to get into the classroom ahead of students. They entered the class at the same time as students and needed to set up immediately for the class.	We provided facilitators with tips for memorizing youth names quickly. We worked with facilitators to identify ways to conduct "meets" that are efficient, but still effective. We also encouraged facilitators to greet students outside of the classroom if they are waiting to enter or when they are walking around the classroom passing out materials at the start of class. If needed, we brainstormed ways sites could prepare their materials and set up the technology to allow a few extra minutes at the start of class.

Strategy	Strengths	Challenges	Approach to addressing the challenge
Two-part verbal praise	Facilitators reported that this strategy comes easily to them. Some facilitators used verbal praise when students made their own decisions or shared openly.	Facilitators struggled to make praise specific and tended to focus on attributes rather than on self-regulation skills. During one observation, the observer noted that, when facilitators provided praise, it was often to a group of students. Facilitators worked to learn names and struggled to incorporate praise, actions that required them to pause and reflect.	We developed additional resources, including concrete examples, for facilitators to use in the classroom to help support them in making praise both personal and specific.
Four-part written praise	A facilitator team at one site had considerable success with written praise and saw it as a tool to encourage positive interaction and engagement with lesson content. Some facilitators said that written praise provided a means to praise students in a specific and personal way.	For some facilitators, written praise did not include all four parts, and praises addressed attributes. Some facilitators raised concerns about gender dynamics and are comfortable providing written praise only to youth of their same gender.	We encouraged facilitators to take quick notes during class, so they have specific examples to draw on when they write notes later. Discussing the gender dynamics of written praise was a frequent topic in coaching calls. We focused on making sure facilitators were praising self-regulation skills, not students' attributes, so facilitators could become more comfortable with providing praise to all their students.
Breath to focus	Facilitators at one site noted that they were surprised at youth's receptiveness to the strategy when they introduced it. They said that some students were uncomfortable but did not reject it outright. Facilitators at one site said that they were comfortable introducing and using this strategy.	Most facilitators struggled to feel comfortable using breath to focus—both introducing it and determining when to use it. Some facilitators were hesitant to use this strategy out of concern that students would think it was "weird."	To overcome facilitators' discomfort and build their confidence, we encouraged sites to use role playing to practice cues and to use the strategy outside of the classroom. We also suggested alternative ways of introducing the strategy and encouraged facilitators to find the wording and pacing that felt natural to them.

Adaptations

Facilitators reported ways that they adapted specific strategies to fit their teaching style and classroom context. For example, one facilitator inserted slides throughout the PowerPoint used to deliver program content as a reminder to use the strategies throughout each session. At another site, facilitators placed the welcome sheet on the underside of each student's name tent, allowing students to add information about themselves as they became more comfortable and got to know the facilitator better.

Program climate

During interviews, facilitators at one site noted youth's reactions to the strategies, particularly written praise. One team of facilitators at this site regularly distributed written praise notes to students during class. These facilitators said youth responded favorably to the praise notes. Specifically, the facilitators felt the praise notes helped encourage more positive interactions and increased students' engagement with the lesson content. The other facilitator team noticed that many youth appeared to relax and pay more attention after they used breath to focus during class.

Appendix B

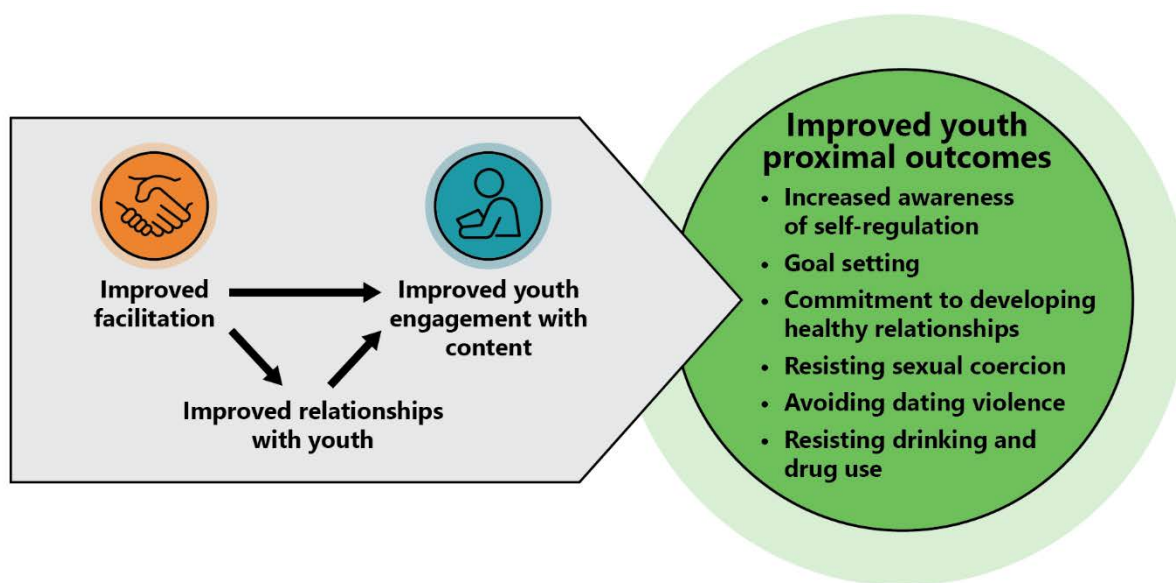
Study Design

The Co-Regulation Implementation Study is an in-depth implementation study designed to answer the following research questions:

1. Does use of the co-regulation facilitation strategies appear to support improvement in facilitation, including how facilitators respond to training and how well they implement the strategies?
2. Does use of the co-regulation facilitation strategy appear to support improvement in youth proximal outcomes, and how do youth respond to SRAE programs when facilitators use co-regulation strategies?

The study's theory of change predicts that improving facilitation could improve (1) the relationship between the youth and the facilitator and (2) the youth's engagement with SRAE program content (Exhibit B.1).

Exhibit B.1. Improving facilitation to improve youth outcomes



In addition to the implementation study, we also conducted a quasi-experimental evaluation to assess the impacts of using co-regulation strategies to improve facilitation and youth outcomes (see Exhibit B.2). This appendix describes four key areas of the Co-Regulation Implementation Study's design: (1) sample size and recruitment, (2) training for and implementation by sites, (3) data collection and analysis, and (4) timeline.

Exhibit B.2. Co-regulation impact study

We conducted a separate impact study using a quasi-experimental approach to examine whether co-regulation strategies improved youth outcomes, as measured by performance measures exit surveys. The study assessed the changes in outcomes for a cohort of youth served by the intervention sites in the year prior to implementation of co-regulation strategies (2021–2022) compared with the year (2022–2023) when the co-regulation strategies were implemented and then compared these changes with the changes in outcomes of youth served in matched comparison sites during the same time period. The study involved five sites in the Co-Regulation Implementation Study with whom we could match to five comparison sites. We used existing administrative data collected as part of the SRAE grantees' performance measures and identified items on the high school youth entry and exit survey that were most aligned with the study's logic model of improving youth satisfaction and engagement. [Registration on Open Science Framework.](#)

Sample size and recruitment

Through the proof-of-concept study (described in Appendix A), the study team determined the scale at which it was logistically feasible to train and support sites to use the co-regulation strategy. We recruited nine sites to implement the co-regulation strategy: the two proof-of-concept sites and seven additional sites. This number ensured facilitators in each site could receive enough training and support to successfully implement the co-regulation strategy. Eligibility criteria for site participation were as follows: in-person SRAE program implementation (not virtual); use of Love Notes, and program delivery in high schools.

We started recruitment by inviting the pilot sites to continue implementing the strategies and to contribute to data collection. To expand the number of sites, we sent an email to all eligible grantees describing the co-regulation strategies and the opportunity to participate in the training and evaluation. The email included the basic eligibility criteria for the evaluation, expectations and timeline for participation, timing of the trainings, and data collection plans. We also provided an informational webinar about the opportunity.

We then held calls with all interested sites to confirm their interest and availability and the expectations for participation. Sites confirmed their participation by signing a memorandum of understanding describing the evaluation and the benefits of participating. For an entire school year of participation, sites were paid \$20,000 to compensate for their time participating in training, completing evaluation activities, and supporting data collection. In addition, we reimbursed sites for any travel costs incurred with participating in training.

Training for and implementation by sites

The study team conducted the initial co-regulation training in fall 2022, which facilitators could attend in person in either Washington, DC (August 2022) or Houston, Texas (September 2022). We trained a total of 49 individuals (SRAE program administrators and facilitators) across the two sessions. In January 2023, the SRAE team held an in-person refresher training in Tampa, Florida, with 38 individuals (SRAE program administrators and facilitators). The training refreshed participants on the initial set of strategies (covered in August/September 2022) and introduced three additional co-regulation strategies for implementation.

After the fall 2022 training, facilitators quickly began implementing the co-regulation strategies in the classroom during fall 2022 and continuing through spring 2023. They received ongoing support from the SRAENE team to develop their confidence and skill in using the strategies and to address challenges. The support provided to each site consisted of biweekly coaching calls, two in-person site visits per semester, and cross-coaching team calls.

In biweekly calls, coaches from the SRAE team (two from Mathematica and one from Public Strategies) helped sites plan where to use the co-regulation strategies in their Love Notes lessons, discussed how to tailor the strategies to

their context and environment, and talked through what was going well and what challenges facilitators were having in using the strategies.

During site visits, SRAE team members watched Love Notes lessons and completed observation forms documenting how facilitators used the co-regulation strategies, the quality and fidelity in their use of the strategies, and how facilitators acting as co-regulators affected youth engagement in the Love Notes curriculum and participation in the class. The SRAE team used the information from observations to inform talking points in the biweekly coaching calls with sites.

In cross-team coaching calls, the study team used sense-making activities to review and discuss the data as they were being collected, share successes and troubleshoot challenges, and reflect on which factors helped facilitators function as co-regulators for youth.

Data collection and analysis

Data collection began in fall 2022 and continued through spring 2023. At the start of data collection, sites provided the SRAE team with the number of schools and classrooms where they were implementing programming during the school year. To address the research questions, the study team collected data on implementation of each co-regulation strategy and proximal outcomes for facilitators and youth using multiple methods, including surveys, focus groups, interviews, classroom observations, and facilitator logs. These data sources captured information on six topics: (1) training and support, (2) implementation fidelity, (3) perceptions of the facilitator-youth relationship, (4) program climate, (5) youth participation and program dosage, and (6) youth engagement and proximal outcomes. Appendix C describes these data sources in detail. Table B.1 maps the domains for improving facilitation and the secondary research questions to the topics for data collection. The secondary questions align to the primary research question, which concerns whether the co-regulation facilitation strategies appear to support improvement in (1) facilitation and (2) youth proximal outcomes.

Table B.1. Proposed domains, research questions, and topics for evaluation

Domain	Research question	Training and support	Implementation fidelity	Perceptions of facilitator-youth relationship	Program climate	Youth participation and program dosage	Youth engagement and proximal outcomes
Improved facilitation	What are facilitators' reactions to the training?	X					
	How well do facilitators implement the co-regulation strategy? What are the successes and challenges associated with implementation?		X	X	X		
Improved youth	How do youth respond to SRAE programs when			X	X	X	X

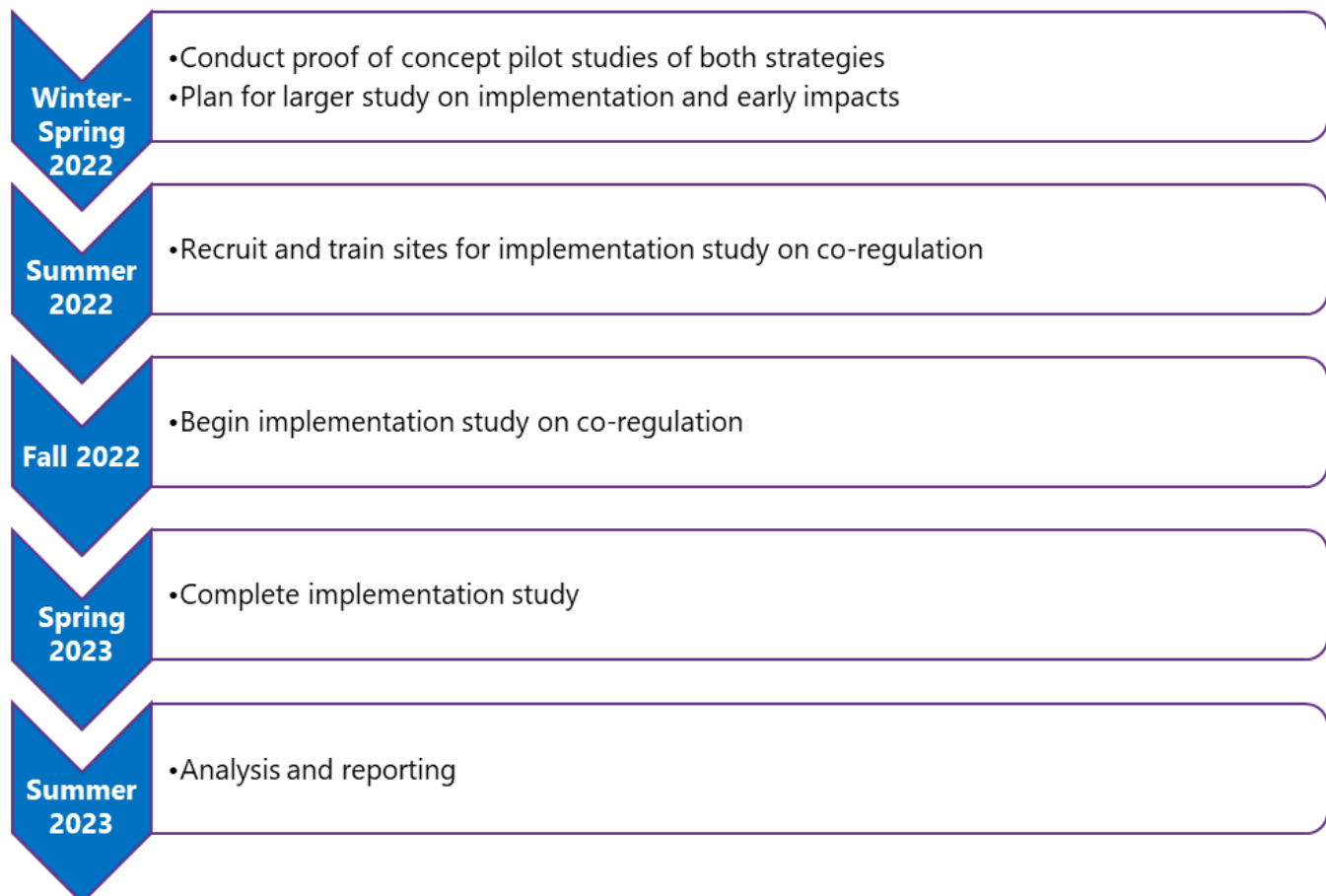
Domain	Research question	Training and support	Implementation fidelity	Perceptions of facilitator-youth relationship	Program climate	Youth participation and program dosage	Youth engagement and proximal outcomes
engagement with content	facilitators use the co-regulation strategy?						

The study team developed systems to analyze data on an ongoing basis. For quantitative data, we used early extracts of data to define the analysis approach and develop programming specifications. We ran analyses on early extracts to enable quick analysis of full data sets when they became available. For qualitative data, we formed a coding and analysis team at the outset of qualitative data collection and developed codebooks for the interview and focus group data. Qualitative data were transcribed and coded in real time on a rolling basis. The coding and analysis team meet weekly to discuss emerging themes and illustrative quotes, and to revise the codebooks as necessary.

Study timeline

The proof-of-concept study and Co-Regulation Implementation Study took place from winter 2022 to summer 2023 (see Exhibit B.3).

Exhibit B.3. Study timeline



Appendix C

Data Sources

We used a variety of methods to collect data on implementation of the co-regulation strategies from facilitators and youth during fall 2022 (first semester) and spring 2023 (second semester). The data sources captured information on six topics: (1) training and support, (2) implementation fidelity, (3) perceptions of the facilitator-youth relationship, (4) program climate, (5) youth participation and program dosage, and (6) youth engagement and proximal outcomes, which are described below.⁹

- 1. Training and support.** We asked facilitators for feedback on the training and the level of support they received throughout the study. This included collecting data on facilitators' perceptions of the training, whether the training increased their knowledge of the strategies, and their level of confidence in using each strategy in the classroom.
- 2. Implementation fidelity.** We collected information on whether facilitators implemented the strategies with fidelity to the training they received. We also documented any adaptations facilitators made to the strategies when using them in the classroom.
- 3. Perceptions of the facilitator-youth relationship.** We collected information on what facilitators thought about their relationship with the youth in their classrooms and what how youth thought about their relationship with their facilitator(s).
- 4. Program climate.** We gathered information about program climate (for example, the quality of interactions between youth, or whether youth felt safe, supported, and accepted by their peers and the facilitator) to understand how using each strategy may have influenced the overall learning environment and youth's perceptions of the program.
- 5. Youth participation and program dosage.** We observed and asked about youth participation during class discussions and the intended and actual dosage of the program at each participating site.
- 6. Youth engagement and proximal outcomes.** We documented youth's reactions to the use of the strategies in the classroom and their level of engagement in the program content when a facilitator used each strategy. In addition, we captured youth feedback on satisfaction and attitudes toward the program.

To collect these data, we used six instruments. Table C.1 shows how evaluation topics mapped to each data source used in the study. Below, we describe the content and purpose of each data source and note how many responses we collected.

⁹ The operational definitions for these evaluation topics pertain only to the Co-Regulation Implementation Study and not to other sub-studies conducted within SRAENE.

Table C.1. Evaluation topics examined in each data source

Data source	Training and support	Implementation fidelity	Perceptions of facilitator-youth relationship	Program climate	Youth participation and program dosage	Youth engagement and proximal outcomes
Facilitator surveys	X					
Facilitator interviews		X	X	X		X
Facilitator logs		X			X	
Classroom observations		X		X		X
Youth focus groups			X	X		X

We collected data using the following instruments:

- **Facilitator surveys.** We collected up to four surveys from each facilitator—initial pre- and post-training surveys in the first semester and wrap-up surveys at the end of each semester. Survey questions asked facilitators to rate their knowledge of the content taught in the training and their perceived self-efficacy in implementing the co-regulation strategies in the classroom. These data assessed whether facilitators understood each strategy after receiving training and what their efficacy was in using the strategies over time. We collected 37 pre-training surveys, 38 post-training surveys, 27 follow-up surveys at the end of the first semester, and 21 follow-up surveys at the end of the second semester.
- **Facilitator interviews.** We conducted two interviews with each facilitator—one toward the end of the first semester and one during the middle-to-late part of the second semester. We asked facilitators about their perceptions of the co-regulation strategies, their ability and confidence in integrating the strategies into the program, their comfort using the strategies, their perception of their relationship with youth, and the overall program climate. The interviews also assessed changes in facilitators' confidence and comfort with the strategies over time. We completed 27 interviews during the first semester and 23 interviews during the second semester.
- **Facilitator logs.** We collected daily implementation log data from facilitators to determine how often they used each co-regulation strategy, their reactions to implementing the strategy, and their perception of how youth reacted to the strategy. The facilitator logs also captured data on adherence to using the strategies regularly in the classroom. We sent the implementation log (via a short, online survey) every weekday for eight consecutive weeks each semester, totaling 80 possible daily reports per facilitator across the two semesters. In total, we collected 833 logs in the first semester and 742 logs in the second semester.
- **Classroom observations.** We conducted in-person classroom observations to document the frequency of each strategy's use, facilitators' proficiency using the strategies, youth reactions to the strategies, and overall program climate. We conducted 67 observations across both semesters for an average of 7 observations per site.
- **Youth focus groups.** We conducted focus groups with youth at eight of the nine sites.¹⁰ Focus groups captured youth's perceptions of the program's climate, facilitators' use of the co-regulation strategies, and

¹⁰ We did not conduct focus groups with youth at one site because the program implemented Love Notes late in the spring semester after data collection was complete.

youth's interactions with and perceptions of the facilitators. We held 16 focus group discussions with 83 youth during the second semester.

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