Evaluating the Efficacy of QuaverSEL:
The Impact of QuaverSEL Instruction on Students' Social and Emotional Skills Growth

EFFECTIVENESS STUDY

March 2021

SEGmeasurement

Table of Contents

Introduction **2**
QuaverSEL Effectiveness Study Overview 2

Methods and Procedures **2**
Research Questions 2
Quantitative Study Design 3
Treatment Implementation 3
Instrumentation SELI-T Ratings 4
Data Collection 5
Sample 5
Initial Study Population 5
Matched Sample 7
Attrition 7
Analytic Sample 8

Data Analysis/Results **11**
Overall Differences in Social and Emotional Skills 11
Self-Awareness Differences 13
Self-Management Differences 14
Social Awareness Differences 15
Relationship Skills Differences 16
Responsible Decision-Making Differences 17
Interaction Between Study Group and Grade Level 18
Interaction Between Study Group and Student Gender 19
Interaction Between Study Group and Student Ethnicity 20

Qualitative Study of QuaverSEL Effectiveness **21**
Overview/Introduction 21
Instrumentation 21
Data Collection 22
Sample 22
Teacher Perceptions 25
Resource Effectiveness 26
QuaverSEL Effectiveness for Developing SEL Skills 27

Summary **32**
Results 33
Conclusion 33

References **34**

Introduction

A growing body of research points to the impact of social and emotional learning (SEL) on academic achievement, workplace performance, and life success (Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., Schellinger, K. B.; 2011). This revelation has led schools to more systematically include SEL in the prekindergarten through twelfth grade education experience (Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., Schellinger, K. B.; 2011). Schools are looking for products and services that can effectively help educators address students' social and emotional skills. Moreover, schools are seeking SEL solutions with scientific evidence supporting the efficacy of those solutions.

QuaverEd developed QuaverSEL for use by schools in the development of students' social and emotional skills. QuaverSEL includes a wide range of social and emotional skills content focused on the five CASEL (updated 2020) skill areas: self-awareness, self-management, responsible decision-making, relationship skills, and social awareness, as well as additional social and emotional skills beyond the five CASEL skill areas. QuaverSEL is designed to improve Pre-K through 5th grade students' social and emotional learning (SEL) skills.

QuaverSEL Effectiveness Study Overview

SEG Measurement conducted a study of the effectiveness of the QuaverSEL instructional program offered by QuaverEd. The purpose of this study was to determine if students provided with QuaverSEL instruction achieved greater gains in social and emotional skills than comparable students who did not receive QuaverSEL instruction. The study was conducted during the 2020-21 school year (August 2020 to January 2021) in nine elementary schools in the Northeast, Southeast, Midwest, and Southwest. The study investigated the impact of QuaverSEL instruction on SEL skill development among matched groups of third and fourth grade students using and not using the product.

This study explored the effectiveness of QuaverSEL using a multi-methods approach. First, a quasi-experimental study compared the social and emotional skills gains between students receiving QuaverSEL instruction (treatment group) and a comparable group of students not receiving QuaverSEL instruction (control group). Teachers used the Social Emotional Learning Instrument for Teachers (SELI-T) to rate students' social and emotional skills at the beginning and end of the study. The ratings were statistically compared to determine if there were differences in SEL skill levels between the treatment and control group students. Second, teachers using the QuaverSEL program participated in a qualitative study to evaluate teacher perceptions of the efficacy of QuaverSEL and its features for developing students' social and emotional skills.

Methods and Procedures

Research Questions

The primary research questions guiding the evaluation of the efficacy of QuaverSEL were

1. Do elementary students who receive instruction using QuaverSEL show larger gains in social and emotional skills than comparable students who do not receive instruction using QuaverSEL? (main effects for study group)
    a. Do elementary students who receive instruction using QuaverSEL show larger gains in the **total social and emotional skills score** than comparable students who do not receive instruction using QuaverSEL?
    b. Do elementary students who receive instruction using QuaverSEL show larger gains for the **five social and emotional skills component scores** than comparable students who do not receive instruction using QuaverSEL?
2. Is QuaverSEL more effective at grade three or four? (interaction of study group and grade)
3. Is QuaverSEL more effective for boys or girls? (interaction of study group and gender)

4. Is QuaverSEL more effective for students of any specific ethnic background? (interaction of study group and ethnicity)
5. Do teachers perceive QuaverSEL to be effective?
6. What aspects of QuaverSEL do teachers feel are effective?
7. For what specific social and emotional skills do teachers feel QuaverSEL is effective?

Questions one through four were addressed through the quantitative study of QuaverSEL effectiveness. Questions five, six, and seven were addressed through the qualitative study of QuaverSEL effectiveness.

Quantitative Study Design

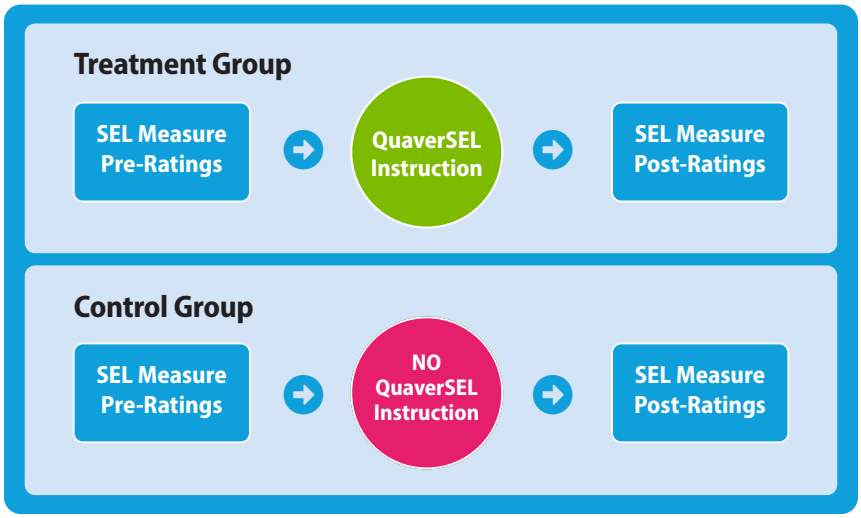
This study was designed to meet the design standards for effectiveness research recognized by the professional educational research community. Specifically, the study was designed to comply with ESSA's (Every Student Succeeds Act) guidance for Tier 2 research (moderate evidence; U.S. Department of Education, 2016) and the Collaborative for Academic, Social, and Emotional Learning's (CASEL, 2020) requirements for SELect evidence-based social and emotional learning (SEL) instructional programs.

Quasi-Experimental Design

The study employed a quasi-experimental, pre-post, treatment-control group design. A non-randomly selected treatment group was compared with a non-randomly selected control group. The treatment group (students who received QuaverSEL instruction) was compared with a control group (students who did not receive QuaverSEL instruction). The treatment and control groups were matched based on initial social and emotional skills level and student background characteristics. The study design is depicted in Figure 1.

Figure 1

Study Design



Treatment Implementation

The treatment was defined as social and emotional skills instruction using the QuaverSEL program provided to elementary level students. Students in the treatment group received QuaverSEL instruction between August 2020 and January 2021. QuaverSEL instruction began in late August or September 2020, depending on individual school schedules.

The QuaverSEL program is a classroom-based program that systematically promotes students' social and emotional competence through a series of lessons and other resources available to the teacher. The program provides teacher support, including initial training and ongoing support to ensure sound implementation.

QuaverSEL includes lessons at each grade level pertaining to the social and emotional skills covered by the QuaverSEL program. In addition to the lessons, teachers can access a number of resources, including songs, animated stories, online activities, and role plays. (Teachers in the control group—not using QuaverSEL—did not have access to the QuaverSEL program or materials.)

Fidelity

Ensuring that the treatment was provided as prescribed is fundamental to the validity of a study. QuaverSEL lessons and other resources are all accessible online; therefore, fidelity was operationalized as number of logins over the course of the study. Treatment group teachers were asked to deliver weekly instruction using QuaverSEL. Participating teachers were required to have logged in at least 16 times over the course of the approximately 16 instructional weeks that comprised the study. This reflects an average of one login per week. Teachers who did not log in at least 16 times were eliminated from the final study analysis for lack of fidelity; two teachers failed to meet the fidelity criteria and were eliminated from the final analysis.

Instrumentation SELI-T Ratings

The Social Emotional Learning Instrument for Teachers (SELI-T) was used in this study to measure the effectiveness of QuaverSEL instruction. The SELI-T is aligned with the skills described in the definition of SEL developed by CASEL (2020): "Social and emotional learning (SEL) involves the processes through which adults and children develop social and emotional competencies in five areas":

- Self-awareness, like knowing your strengths and limitations
- Self-management, like being able to stay in control and persevere through challenges
- Social awareness, like understanding and empathizing with others
- Relationship skills, like being able to work in teams and resolve conflicts
- Responsible decision-making, like making ethical and safe choices

The SELI-T asks teachers to rate students' current SEL skill level in each of five skill areas defined by CASEL (2020). Scores for each of the five primary social and emotional skill areas measured were examined. The overall total (composite) social and emotional skills score, based on the five skill area ratings, was calculated. The composite score was the simple sum of the five skill area scores.

The SELI-T has been used in several studies and continues to be refined to improve reliability and validity of the instrument (Elliot, 2021). Historically, the reliability of the SELI-T ranges from .90 to .94; the reliability of the SELI-T in this study was .94 (Cronbach's Alpha). The SELI-T has strong content validity, including direct alignment to the CASEL five competencies (a widely accepted definition of the SEL construct published by CASEL). Additional validity evidence includes a factor analytic study confirming a single factor solution (with each of the five rating scales loaded on a single factor with primary loadings above .55 and no secondary loadings above .35), evidence of the ability of the instrument to differentiate between instructed and non-instructed groups, and construct validity studies demonstrating expected patterns of relationships with several variables (Elliot, 2020).

In the self-awareness category, feelings, interests, values, strengths, and abilities were measured, as well as self-confidence. Self-management included measuring the regulation of emotions and the ability to set personal and academic goals. For social awareness, the ability to empathize with others as well as recognition and acceptance of individual and group differences were measured. The relationship skills measured included establishing and maintaining healthy relationships based on cooperation, managing and resolving interpersonal conflict, resisting

inappropriate social pressure, not participating in bullying, discouraging bullying, and seeking acceptance and assistance when needed. The last SEL skill measured for the study was responsible decision-making, using problem solving and decision-making skills effectively in academic and social situations, considering ethical standards, safety, standards of conduct, respect for others, contributing to the wellbeing of the school and community, and considering the consequences of his/her actions.

Data Collection

In August of 2020, SEG Measurement provided participating teachers with the SELI-T rating forms to be completed. The teachers were asked to complete the ratings within the first few weeks of their school year, in order to establish baseline equivalence of the treatment and control groups and for later use in measuring social and emotional growth. Depending on specific school schedules, teachers completed their student ratings between late August and the end of September. (One teacher with a particularly late start completed the rating forms at the beginning of October.) From September through early January, treatment group teachers provided QuaverSEL instruction to their students; the control group teachers did not provide students with QuaverSEL instruction.

The teachers of the treatment and control groups completed the post-ratings of students' social and emotional skills (SELI-T) between early December and end of January, depending on specific school schedules.

Sample

Recruitment

The population explored in this study was defined as early elementary students. This was operationalized as students in grades three and four. Twenty-six teachers and 30 classrooms, with 479 students, were recruited. Recruitment yielded approximately 217 grade three students and 262 grade four students. Approximately 254 students were recruited for control and approximately 226 students were recruited for treatment. Participating classes represented nine states from the Northeast, Southeast, Midwest, and Southwest: New York, Alabama, Florida, North Carolina, South Carolina, Tennessee, Illinois, and Oklahoma.

The study sample evolved over the course of the study. The study sample was documented at three points in time to ensure that those natural and intentional processes were transparent.

- **Initial Study Population –** the number and characteristics of the treatment and control groups at the outset of the study
- **Matched Sample –** the number and characteristics of the treatment and control groups created through propensity score matching
- **Analytic Sample –** the number and characteristics of the final treatment and control groups used for analysis, after attrition and removal of classes for lack of fidelity in instruction

For each sample stage, the number of students included overall and in each study group were calculated. The number of boys and girls and the number of students in each ethnic group for both study groups were also calculated.

Initial Study Population

The initial study population was defined as the students participating at the outset of the study. This initial group of participants was used to create the matched study groups (treatment and control). The number and characteristics of the treatment and control groups in the initial study population prior to matching are described below. The number of students included in any specific analysis may vary due to handling of missing data.

Four hundred and seventy nine students, 254 control group and 225 treatment group students, were included in the initial study population.

Initial Ability

There was a significant difference in the initial social and emotional skills ability between the pools of students in the initial study population, from which the matched control and treatment groups were created (F=7.035; 1/477; p=.008). The average (mean) initial social and emotional skills level was 15.80 for the control group pool and 17.03 for the treatment group pool. There was less than a quarter of a standard deviation difference (mean difference=.22).

Table 1
Mean Initial Social and Emotional Ability Scores
Initial Study Population

Study Group	Mean	N	Std. Deviation
Control	15.80	254	5.66
Treatment	17.03	224	4.30
Total	**16.37**	**478**	**5.10**

Gender

There was no significant difference in the number of male and female students between the control and treatment group pools (chi square .363; df=1; p=.547).

Table 2
Gender Distribution
Initial Study Population

		Gender		Total
		Female	Male	
Study Group	Control	129	124	253
	Treatment	109	117	226
	Total	**238**	**241**	**479**

Ethnicity

There was a significant difference in the ethnicity of the initial population of the treatment and control group pools (chi square 17.81; df=6; p=.007). While the Caucasian and Hispanic categories were similar for the treatment and control groups, the number of African American/Black and multiracial students was somewhat greater in the control group pool than in the treatment group pool, for the initial study population.

Table 3
Ethnicity Distribution
Initial Study Population

		Asian	African American/ Black	Hispanic	Multiracial	Native American	Caucasian	Total
Study Group	Control	5	51	45	28	3	120	252
	Treatment	2	34	43	10	0	137	226
	Total	**7**	**85**	**88**	**38**	**3**	**257**	**478**

Matched Sample

The matched sample for the treatment and control groups was created using propensity score matching. Initial ability (teacher pre-ratings), gender, and ethnicity were included in a logistic regression with study group membership as the outcome variable to create a composite propensity score variable for use in identifying matched pairs of treatment and control group students. To be considered a suitable match, students were expected to be within 5% of one another with respect to the composite propensity score. The number and characteristics of the treatment and control groups in the matched sample are described below.

Two hundred two control group students were matched successfully with 202 treatment group students, for a total matched sample size of 404.

Attrition

Students without post-ratings of social and emotional skills were removed from the sample after matching. These were students who left the class/school or who otherwise were unavailable for teachers to complete post-ratings of social and emotional skills. Six students (four treatment and two control) did not have post-ratings available. Three of those treatment students without post-ratings were in the matched pairs, so the corresponding matching control students were removed. One of the control students without post-ratings was in the matched pairs, so the corresponding treatment student was removed. In total, considering both those without post-ratings and their "partner," a total of five treatment students and five control students were removed. Therefore, the final number of students in the matched sample was 202 control and 202 treatment.

In summary, (1) ten students, five treatment (2%) and five control (2%), were lost due to attrition; and (2) 66 students, 19 treatment and 46 control, were lost due to matching.

Initial Ability

There was no significant difference in the initial ability of the students in the treatment and control groups for the matched groups (F=1.486;1/403; p=.224). The average (mean) initial social and emotional skills level was 16.13 for the control group and 16.74 for the treatment group.

Table 4
Mean Initial Social and Emotional Ability Scores
Matched Sample

Study Group	Mean	N	Std. Deviation
Control	16.13	202	5.70
Treatment	16.74	202	4.33
Total	**16.44**	**404**	**5.06**

Gender

There was no significant difference in the number of males and females in the treatment and control groups for the matched sample (chi square=.357; df=1; p=.550).

Table 5
Gender Distribution
Matched Sample

		Gender		Total
		Female	Male	
Study Group	Control	102	100	202
	Treatment	96	106	202
	Total	**198**	**206**	**404**

Ethnicity

There was no significant difference in the ethnicity of the matched sample treatment and control groups (chi square 3.82; df=4; p=.431).

Table 6
Ethnicity Distribution
Matched Sample

		Ethnicity					
		Asian	**African American/ Black**	**Hispanic**	**Multiracial**	**Caucasian**	**Total**
Study Group	Control	1	35	44	17	105	202
	Treatment	2	29	41	10	120	202
	Total	**3**	**64**	**85**	**27**	**225**	**404**

Analytic Sample

The analytic sample was the final set of treatment and control students included in the study analyses. The number and characteristics of the analytic sample for the treatment and control groups are described below.

Three hundred seventy-nine students were included in the final analytic sample. There were 200 students in the control group and 179 students in the treatment group. The reductions from the Matched Sample totals are the result of the removal of two teachers and their students for failure to meet the minimum standard for treatment fidelity as prescribed for the treatment as delivered. Teachers were required to have a minimum of 16 logins to their QuaverSEL account (or approximately one login per week) during the study period to remain in the analyses.

Analytic Sample Initial Ability

There was no significant difference in the initial ability of the students in the treatment and control groups for the analytic sample (F=1.606; df=1/378; p=.206). The average (mean) initial social and emotional skills level was 16.17 for the control group and 16.84 for the treatment group.

Table 7
Mean Initial Social and Emotional Ability Scores
Analytic Sample

Study Group	Mean	N	Std. Deviation
Control	16.17	200	5.71
Treatment	16.84	179	4.47
Total	**16.48**	**379**	**5.17**

Analytic Sample Gender

There was no significant difference in the number of males and females in the treatment and control groups for the analytic sample (chi square=.357; df=1; p=.550).

Table 8
Gender Distribution
Analytic Sample

		Gender		Total
		Female	Male	
Study Group	Control	100	100	200
	Treatment	84	95	179
	Total	**184**	**195**	**379**

Analytic Sample Ethnicity

There was no significant difference in the ethnicity of the analytic sample treatment and control groups (chi square=2.510; df=4; p=.643).

Table 9
Ethnicity Distribution
Analytic Sample

		Ethnicity					
		Asian	African American	Hispanic	Multiracial	Caucasian	Total
Study Group	Control	1	35	44	17	103	200
	Treatment	1	27	36	10	105	179
Total		**2**	**62**	**80**	**27**	**208**	**379**

Table 10
Teacher Profile

Teacher/School Characteristic	Control Group Teachers	Treatment Group Teachers	Total
School Size			
200 or fewer	1	0	1
201 – 400	2	2	4
401 – 600	4	2	6
601 – 800	8	5	13
801 or more	0	2	2
Years of Teaching Experience			
1 year or fewer	0	0	0
2–5 years	2	1	3
6–10 years	0	6	6
11–15 years	3	2	5
16–20 years	5	1	6
21–25 years	1	0	1
26 or more years	4	1	5
Grade Level Taught			
Fourth Grade	8	4	12
Third and Fourth Grades	1	3	4
Third Grade	6	4	10
Highest Degree Earned			
Bachelor's (e.g., B.A., B.S.)	8	3	11
Master's (e.g., M.A., M.S., M.F.A., M.B.A.)	7	8	15
Gender			
Female	15	11	26
Male	0	0	0
Ethnicity			
Caucasian/White	12	10	22
Hispanic	0	0	0
African American/Black	0	1	1
Native American/Pacific Islander	0	0	0
Asian	0	0	0
Two or more ethnicities	1	0	1
Other	2	0	2
School Location			
Rural	2	2	4
Suburban	10	7	17
Urban (City)	3	2	5
Technology Comfort Level			
Very comfortable	13	9	22
Somewhat comfortable	1	2	3
Limited comfort	1	0	1
Instructional Delivery Model Used			
Blended or hybrid, including both online and on-site instruction	7	8	15
Online, virtual instruction	6	1	7
Traditional, in-school, on-site Instruction	2	2	4

Data Analysis/Results

The effectiveness of QuaverSEL instruction was evaluated using Analysis of Covariance (ANCOVA). ANCOVA can be used to examine the differences in outcomes between treatment and control groups, while adjusting for any differences in initial skills of students in the treatment and control groups. For this study, ANCOVA was used to examine social and emotional skills outcome differences between those receiving QuaverSEL instruction and those not receiving QuaverSEL instruction, adjusting for any differences in initial social and emotional skills levels. Specifically, ANCOVA was used to examine the differences in social and emotional skills outcomes as rated by teachers (SELI-T ratings; dependent variable) between the treatment and control groups (independent variable) while adjusting for students' initial social and emotional skills levels (SELI-T pre-ratings; covariate). Though the two study groups were matched statistically using propensity score matching, ANCOVA adjusted for any residual differences not accounted for during the matching process.

The study examined treatment and control differences for the overall total composite scores and for each of the five social and emotional subskills included on the SELI-T. The study then examined the interaction between study group membership, grade, gender, and ethnicity to evaluate whether QuaverSEL instruction was particularly effective for either grade, either gender, or any ethnic background.

Overall Differences in Social and Emotional Skills

Students who received instruction using QuaverSEL showed significantly greater improvement in their overall social and emotional skills than did students who did not receive QuaverSEL instruction. The study examined the difference in overall social and emotional skills growth between students receiving QuaverSEL instruction (treatment) and students not receiving QuaverSEL instruction (control), controlling for students' initial overall social and emotional skills (covariate). Using ANCOVA, the study found a statistically significant difference in teacher ratings of students' social and emotional skills (SELI-T scores) between the treatment group and the control group when controlling for students' initial social and emotional skills levels ($F=20.21$; $df=1/378$; $p<.001$). The treatment group achieved an average (mean) social and emotional skills post-rating score of 20.49, while the control group achieved an average (mean) social and emotional skills post-rating score of 18.62; this reflects an effect size of .40. This is documented in Tables 11 and 12 and is illustrated in Figures 2 and 3 below.

Table 11

ANCOVA Comparing Treatment and Control Groups Social and Emotional Skills Outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	608.280	2	304.140	21.230	.001
Intercept	9494.838	1	9494.838	662.785	.001
Pre-Ratings	279.159	1	279.159	19.487	.001
Study Group	289.516	1	289.516	20.210	.001
Error	5386.453	376	14.326		
Total	**150207.000**	**379**			
Corrected Total	**5994.734**	**378**			

** R Squared = .101 (Adjusted R Squared = .097)*

Table 12

Mean Social and Emotional Skills Outcomes by Study Group
(controlling for initial social and emotional skills levels)

Study Group	Mean	Std. Deviation	N
Control	18.62*	4.37	200
Treatment	20.49*	3.24	179
Total	**19.56***	**3.98**	**379**

**Covariates appearing in the model are evaluated at the following values: Pre-test = 16.48*

Figure 2

Comparison of Treatment and Control Groups
Overall Social and Emotional Skills Growth in Social and Emotional Skills

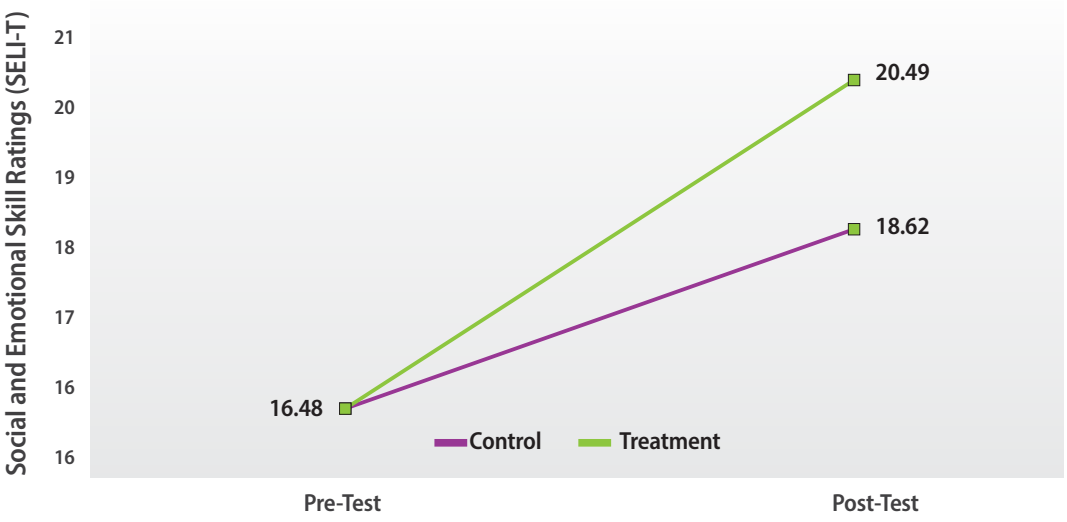
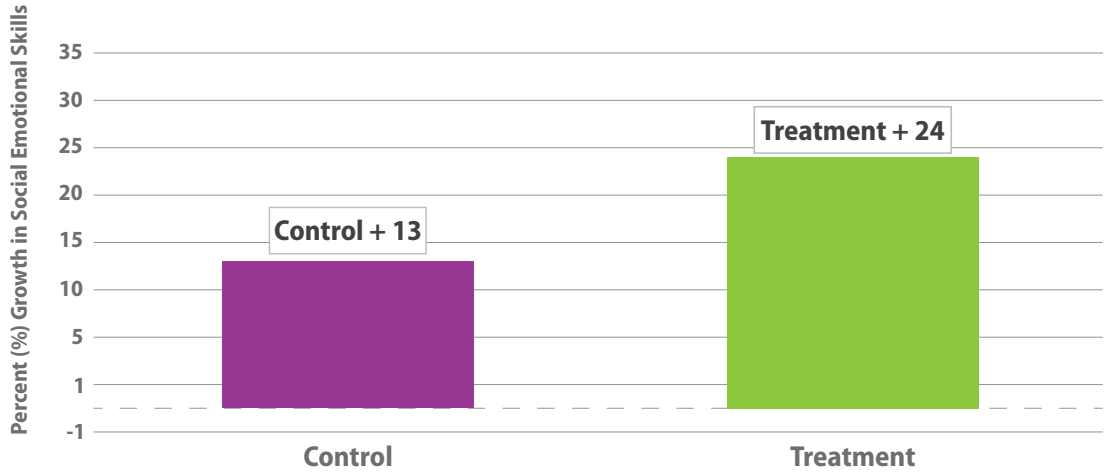


Figure 3

Treatment and Control Groups Percentage Growth



Self-Awareness Differences

Students who received instruction using QuaverSEL (treatment) showed significantly greater improvement in their self-awareness skills than did students who did not receive QuaverSEL instruction (control). The study examined the difference in self-awareness skills growth between students receiving QuaverSEL instruction (treatment) and students not receiving QuaverSEL instruction (control), controlling for students' initial self-awareness skills (covariate). Using ANCOVA, the study found a statistically significant difference in teacher ratings of students' self-awareness skills (SELI-T scores) between the treatment group and the control group when controlling for students' initial self-awareness skill levels ($F=17.91$; $df=1/378$; $p<.001$). The treatment group achieved an average (mean) self-awareness skills of 4.15, while the control group achieved an average (mean) self-awareness skills post-rating of 3.77; this reflects an effect size (Cohen ES) of .40.

Table 13

ANCOVA Comparing Treatment and Control Groups Self-Awareness Skills Outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	22.928*	2	11.464	15.071	.001
Intercept	492.160	1	492.160	646.999	.001
Self-Awareness Pre	8.084	1	8.084	10.627	.001
Study Group	13.624	1	13.624	17.910	.001
Error	286.016	376	.761		
Total	**6214.000**	**379**			
Corrected Total	**308.945**	**378**			

** R Squared = .074 (Adjusted R Squared = .069)*

Table 14

Mean Self-Awareness Outcomes (Controlling for Initial Self-Awareness)

Study Group	Mean	Std. Deviation	N
Control	3.77*	.978	200
Treatment	4.15*	.763	179
Total	**3.96***	**.904**	**379**

**Covariates appearing in the model are evaluated at the following values: Self-Awareness Pre = 3.24.*

Self-Management Differences

Students who received instruction using QuaverSEL showed significantly greater improvement in their self-management skills than did students who did not receive QuaverSEL instruction. The study examined the difference in self-management skills growth between students receiving QuaverSEL instruction (treatment) and students not receiving QuaverSEL instruction (control), controlling for students' initial self-management skills (covariate). Using ANCOVA, the study found a statistically significant difference in teacher ratings of students' self-management skills (SELI-T scores) between the treatment group and the control group when controlling for students' initial self-management skill levels ($F=15.36$; $df=1/378$; $p<.001$). The treatment group achieved an average (mean) self-management skills post-rating of 4.06, while the control group achieved an average (mean) self-management skills post-rating of 3.68; this reflects an effect size (Cohen ES) of .39.

Table 15
ANCOVA Comparing Treatment and Control Groups Self-Management Skills Outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	23.108*	2	11.554	14.955	.001
Intercept	510.148	1	510.148	660.338	.001
Self-Management Pre	9.363	1	9.363	12.120	.001
Study Group	11.863	1	11.863	15.355	.001
Error	290.481	376	.773		
Total	**5961.000**	**379**			
Corrected Total	**313.588**	**378**			

** R Squared = .074 (Adjusted R Squared = .069)*

Table 16
Mean Self -Management Outcomes (Controlling for Initial Self-Management)

Study Group	Mean	Std. Deviation	N
Control	3.68*	.950	200
Treatment	4.06*	.822	179
Total	**3.87***	**.911**	**379**

** Covariates appearing in the model are evaluated at the following values: Self-Management Pre = 3.24.*

Social Awareness Differences

Students who received instruction using QuaverSEL showed significantly greater improvement in their social-awareness skills than did students who did not receive QuaverSEL instruction. The study examined the difference in social-awareness skills growth between students receiving QuaverSEL instruction (treatment) and students not receiving QuaverSEL instruction (control), controlling for students' initial social-awareness skills (covariate). Using ANCOVA, the study found a statistically significant difference in teacher ratings of students' social-awareness skills (SELI-T scores) between the treatment group and the control group when controlling for students' initial social-awareness skill levels ($F=9.82$; $df=1/378$; $p<.002$). The treatment group achieved an average (mean) social-awareness skills post-rating of 4.05, while the control group achieved an average (mean) social-awareness skills post-rating of 3.76; this reflects an effect size (Cohen ES) of .28.

Table 17

ANCOVA Comparing Treatment and Control Groups Social Awareness Skills Outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	24.915[a]	2	12.458	15.547	.001
Intercept	400.333	1	400.333	499.628	.001
Social Awareness Pre	16.044	1	16.044	20.024	.001
Study Group	7.871	1	7.871	9.823	.002
Error	301.275	376	.801		
Total	**6090.000**	**379**			
Corrected Total	**326.190**	**378**			

** R Squared = .076 (Adjusted R Squared = .071*

Table 18

Mean Social Awareness Outcomes (Controlling for Initial Social Awareness)

Study Group	Mean	Std. Deviation	N
Control	3.76*	1.04	200
Treatment	4.05*	.766	179
Total	**3.91***	**.929**	**379**

** Covariates appearing in the model are evaluated at the following values: Social Awareness Pre = 3.31.*

Relationship Skills Differences

Students who received instruction using QuaverSEL showed significantly greater improvement in their relationship skills than did students who did not receive QuaverSEL instruction. The study examined the difference in relationship skills growth between students receiving QuaverSEL instruction (treatment) and students not receiving QuaverSEL instruction (control), controlling for students' initial relationship skills (covariate). Using ANCOVA, the study found a statistically significant difference in teacher ratings of students' relationship skills (SELI-T scores) between the treatment group and the control group when controlling for students' initial relationship skill levels ($F=7.55$; $df=1/378$; $p<.006$). The treatment group achieved an average (mean) relationship skills post-rating of 4.03, while the control group achieved an average (mean) relationship skills post-rating of 3.77; this reflects an effect size (Cohen ES) of .26.

Table 19
ANCOVA Comparing Treatment and Control Groups Relationship Skills Outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	16.218*	2	8.109	9.786	.001
Intercept	400.944	1	400.944	483.871	.001
Relationship Pre	9.659	1	9.659	11.656	.001
Study Group	6.256	1	6.256	7.550	.006
Error	311.560	376	.829		
Total	**6076.000**	**379**			
Corrected Total	**327.778**	**378**			

** R Squared = .049 (Adjusted R Squared = .044)*

Table 20
Mean Relationship Skills Outcomes (Controlling for Initial Relationship Skills)

Study Group	Mean	Std. Deviation	N
Control	3.77*	1.01	200
Treatment	4.03*	.814	179
Total	**3.90***	**.931**	**379**

** Covariates appearing in the model are evaluated at the following values: Relationship Skills Pre = 3.37.*

Responsible Decision-Making Differences

Students who received instruction using QuaverSEL showed significantly greater improvement in their responsible decision-making skills than did students who did not receive QuaverSEL instruction. The study examined the difference in responsible decision-making skills growth between students receiving QuaverSEL instruction (treatment) and students not receiving QuaverSEL instruction (control), controlling for students' initial responsible decision-making skills (covariate). Using ANCOVA, the study found a statistically significant difference in teacher ratings of students' decision-making skills (SELI-T scores) between the treatment group and the control group when controlling for students' initial decision-making skill levels ($F=28.14$; $df=1/378$; $p<.001$). The treatment group achieved an average (mean) responsible decision-making skills post-rating of 4.16, while the control group achieved an average (mean) responsible decision-making skills post-rating of 3.68; this reflects an effect size (Cohen ES) of .49.

Table 21

ANCOVA Comparing Treatment and Control Groups Decision-Making Skills Outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	38.888*	2	19.444	24.725	.001
Intercept	474.475	1	474.475	603.339	.001
Decision Pre	13.467	1	13.467	17.124	.001
Study Group	22.132	1	22.132	28.143b	.001
Error	295.693	376	.786		
Total	**6114.000**	**379**			
Corrected Total	**334.580**	**378**			

Table 22

Mean Decision-Making Skills Outcomes (Controlling for Initial Decision-Making Skills)

Study Group	Mean	Std. Deviation	N
Control	3.68*	.974	200
Treatment	4.16*	.822	179
Total	**3.92***	**.941**	**379**

** Covariates appearing in the model are evaluated at the following values: Decision-Making Pre = 3.29.*

Interaction Between Study Group and Grade Level

To further understand the impact of QuaverSEL instruction, the study examined the interaction between study group and grade level. This helped answer the question whether QuaverSEL instruction was more or less effective at either grade level.

The study constructed an ANCOVA model including Study Group and Grade Level as independent variables, initial social and emotional skills level as a covariate, and social and emotional skills outcomes (teacher post-ratings) as the dependent variable (Tables 23 and 24 below).

The study found no significant interaction between study group membership and student grade level (F=1.89; df=1/378; p=.169). While there was a significant main effect for study group (F=22.22; df=1/378; p=.001) and grade level (F=5.14; df=1/378; p=.024), the non-significant interaction effect suggests that there is no unique benefit to providing QuaverSEL at either grade three or four. In short, QuaverSEL appeared to be equally effective at both grades three and four.

Table 23
ANCOVA Study Group x Grade Level Social and Emotional Skills Outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	703.034*	4	175.759	12.422	.001
Intercept	9315.887	1	9315.887	658.416	.001
Pre-Test	293.913	1	293.913	20.773	.001
Study Group	314.361	1	314.361	22.218	.001
Grade	72.760	1	72.760	5.142	.024
Study Group * Grade	26.848	1	26.848	1.898	.169
Error	5291.699	374	14.149		
Total	**150207.000**	**379**			
Corrected Total	**5994.734**	**378**			

** R Squared = .117 (Adjusted R Squared = .108)*

Table 24
Mean Social and Emotional Skills Outcomes
Study Group by Grade
(Controlling for Initial Social and Emotional Skills)

Study Group	Grade	Mean	Std. Deviation	N
Control	3	18.84*	4.49	105
	4	18.50*	4.24	95
	Total	18.67*	4.37	200
Treatment	3	21.22*	2.94	80
	4	19.80*	3.39	99
	Total	20.50*	3.24	179
Total	**3**	**20.30***	**4.04**	**185**
	4	**19.15***	**3.90**	**194**
	Total	**19.59***	**3.98**	**379**

** Covariates appearing in the model are evaluated at the following values: PreTotal = 16.4828.*

Interaction Between Study Group and Student Gender

We also investigated the interaction between study group membership and the gender of the students participating. This helped answer the question whether QuaverSEL instruction was more or less effective for either boys or girls. The study constructed an ANCOVA model including Study Group and Gender as independent variables, initial social and emotional skills level as a covariate, and social and emotional skills outcomes (teacher post-ratings) as the dependent variable (Tables 25 and 26 below). The interaction of Study Group and Gender was of primary interest.

The study found no significant interaction between study group membership and student gender (F=.044; df=1/378; p=.834). The study found a significant main effect for study group (F=20.44; df=1/378; p=.001), although gender was non-significant (F=2.70; df=1/378; p=.102). The non-significant interaction suggests that there is no unique benefit accruing from QuaverSEL use with male or female students. In short, QuaverSEL appeared to be equally effective for both boys and girls.

Table 25
ANCOVA Study Group x Gender
Social and Emotional Skills Outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	648.009*	4	162.002	11.332	.001
Intercept	9028.770	1	9028.770	631.557	.001
Pre-Test	308.594	1	308.594	21.586	.001
Study Group	292.241	1	292.241	20.442	.001
Gender	38.527	1	38.527	2.695	.102
Study Group * Gender	.631	1	.631	.044	.834
Error	5346.724	374	14.296		
Total	**150207.000**	**379**			
Corrected Total	**5994.734**	**378**			

** R Squared = .108 (Adjusted R Squared = .099)*

Table 26
Mean Social and Emotional Skills Outcomes
Study Group by Gender
(Controlling for Initial Social and Emotional Skills)

Study Group	Gender	Mean	Std. Deviation	N
Control	Female	19.05*	4.17	100
	Male	18.32*	4.57	100
	Total	18.68*	4.37	200
Treatment	Female	20.73*	3.50	84
	Male	20.16*	3.00	95
	Total	20.45*	3.24	179
Total	**Female**	**19.89***	**3.98**	**184**
	Male	**19.24***	**3.99**	**195**
	Total	**19.56***	**3.98**	**379**

** Covariates appearing in the model are evaluated at the following values: PreTotal = 16.48*

Interaction Between Study Group and Student Ethnicity

As a final step, we investigated the potential interaction between study group membership and the ethnic background of the students participating. This helped answer the question whether QuaverSEL instruction was more effective for students of any specific ethnic background.

The study constructed an ANCOVA model including Study Group and Ethnicity as independent variables, initial social and emotional skills level as a covariate, and social and emotional skills outcomes (teacher post-ratings) as the dependent variable (Tables 27 and 28 below).

The study found no significant main effects for study group (F=.3,50; df=1/378; p=.062), although a small significant effect was observed for ethnicity (F=242; df=1/378; p=.048). The interaction between study group and student ethnicity was non-significant (F=2.70; df=1/378; p=.124). The non-significant interaction of study group and student ethnicity suggests that there is no unique benefit accruing from QuaverSEL to any specific ethnic group. QuaverSEL instruction appears to be equally effective for students of all ethnic backgrounds.

Table 27

ANCOVA Study Group x Ethnicity • Social and Emotional Skills Outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	831.101*	10	83.110	5.923	.001
Intercept	4962.320	1	4962.320	353.653	.001
Pre-Test	285.446	1	285.446	20.343	.001
Study Group	49.150	1	49.150	3.503	.062
Ethnicity	135.980	4	33.995	2.423	.048
Study Group • Ethnicity	102.116	4	25.529	1.819	.124
Error	5163.632	368	14.032		
Total	**150207.000**	**379**			
Corrected Total	**5994.734**	**378**			

** R Squared = .139 (Adjusted R Squared = .115)*

Table 28
Mean Social and Emotional Skills Outcomes Study Group by Ethnicity (Controlling for Initial Social and Emotional Skills)

Study Group	Ethnicity	Mean	Std. Deviation	N
Control	Asian	16.53*	.	1
	African American/Black	18.54*	4.87	35
	Hispanic	18.97*	4.02	44
	Multiracial	17.70*	4.60	17
	Caucasian	18.79*	4.33	103
	Total	**18.10***	**4.37**	**200**
Treatment	Asian	18.56*	.	1
	African American/Black	18.88*	3.29	27
	Hispanic	22.20*	2.01	36
	Multiracial	21.35*	3.65	10
	Caucasian	20.15*	3.34	105
	Total	**18.10***	**3.24**	**179**
Total	**Asian**	**17.55***	**.71**	**2**
	African American/Black	**18.71***	**4.23**	**62**
	Hispanic	**20.58***	**3.56**	**80**
	Multiracial	**19.53***	**4.52**	**27**
	Caucasian	**19.47***	**3.94**	**208**
	Total	**19.17***	**3.98**	**379**

Qualitative Study of QuaverSEL Effectiveness

Overview/Introduction

To complement the quantitative study of QuaverSEL effectiveness, SEG Measurement conducted a qualitative study of QuaverSEL. Specifically, at the beginning of 2021, the study surveyed teachers using QuaverSEL to explore teacher perceptions of QuaverSEL. The survey provided a more complete understanding of QuaverSEL effectiveness and facilitated an understanding of product effectiveness in greater depth.

Instrumentation

SEG Measurement developed a survey instrument to collect information from teachers participating in the study. The survey instrument included approximately 72 questions, including teacher identifying information, teacher and school background information, teacher perceptions of QuaverSEL overall and QuaverSEL features, teacher judgments of the effectiveness of QuaverSEL for developing each social and emotional skill included within the QuaverSEL program, and measures of behavioral intent targeting the likelihood of future use and of recommending QuaverSEL to colleagues. The control group teachers completed only those questions addressing teacher identifying information and teacher and school background information.

The survey instrument included a statement of importance, instructions for completion, the timeline for completion, and the approximate amount of time needed to complete the survey (15–25 minutes).

The survey included three types of questions: multiple choice, rating scale, and open-ended.

- **Multiple Choice** – A question is presented, and the respondent is asked to select a response from a list of alternatives presented (e.g., How many years have you lived in your current location?: 1-3, 4-6, 7-9, 10 or more years).
- **Rating Scale** – A statement is presented, and the statement is rated on a 3- or 5-point scale (e.g., never, sometimes, always, never).
- **Open-ended –** The response is presented as free-form text, with no selection or rating of content provided. (What did you like most about shopping in Walmart?)

Data Collection

The teacher survey was administered online over a two and a half-week period in late January 2021. Participating teachers were contacted via email and provided with a link to access the online survey and asked to complete the survey. Teachers were sent a follow-up email reminding them to complete the survey about one week following the initial email and then again about one and a half weeks following the initial email. The few teachers not completing the survey at that point were contacted personally via email and phone. One hundred percent of the participating teachers completed the concluding survey.

Sample

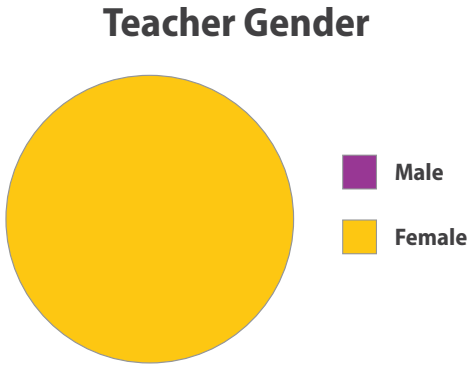
The teacher sample for the survey consisted of the eleven treatment group teachers who participated in the quasi-experimental study. (A survey collecting only identifying and background information was administered to the control group teachers.) The profile of the eleven teachers responding to the survey is presented in Table 10 (on page 10).

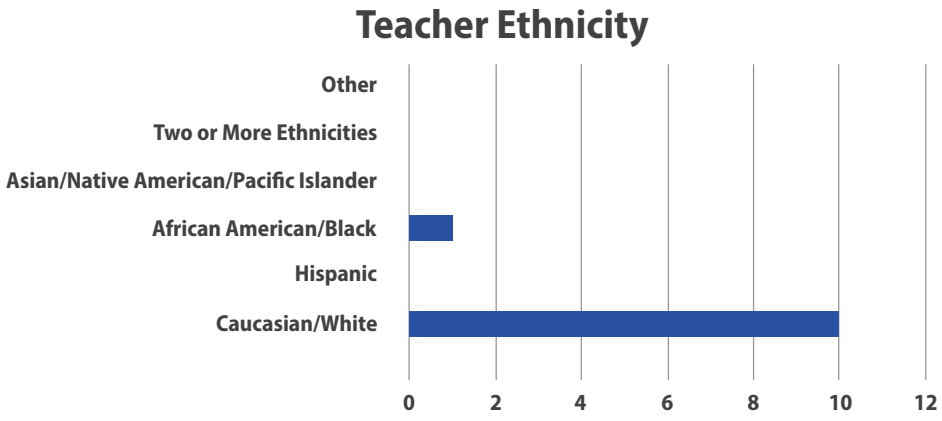
Teacher Profile

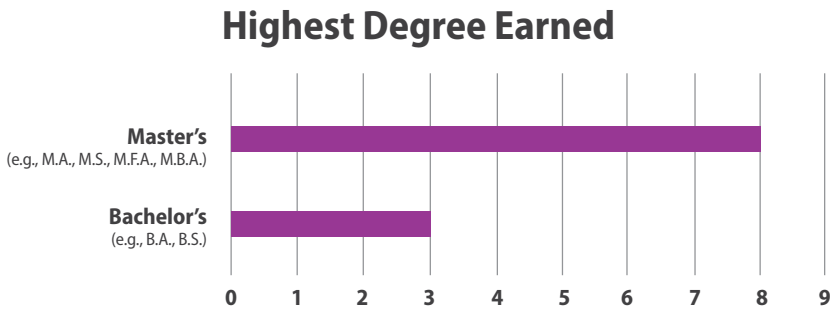
- **Gender and Ethnicity.** All (100%) of the eleven teachers completing the survey were female, and about 90% classified themselves as Caucasian.
- **Highest Degree Earned.** Nearly three quarters (72%) indicated that their highest degree earned was a master's degree; the remaining teachers indicated that their highest degree earned was a bachelor's degree.
- **Teaching Experience.** Nearly all of the respondents had significant teaching experience; half (55%) indicated they had six to ten years of teaching experience, and all but one of the remaining teachers (36%) reported 11 or more years of teaching experience.
- **School Size.** About four fifths (82%) of the teachers reported teaching in elementary schools that were medium to large, with more than 400 students. The remaining teachers (18%) indicated they taught in smaller elementary schools, with 200 to 400 students.
- **Comfort Using Technology.** About four fifths (82%) of the teachers indicated that they were very comfortable using technology; the remaining teachers (18%) indicated that they were somewhat comfortable using technology.
- **Instructional Delivery Model.** About three quarters (72%) of the teachers indicated that they taught on-site in a blended or hybrid model, with both online and on-site instruction; about one fifth (18%) of the teachers indicated that they taught in a traditional in-school, on-site environment.

Table 29

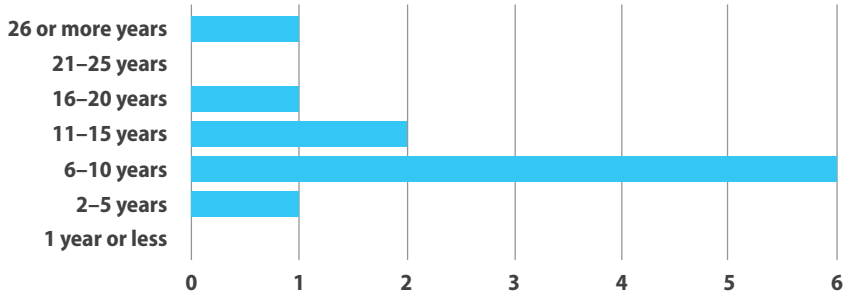
Teacher Survey Respondent Profile (Treatment)



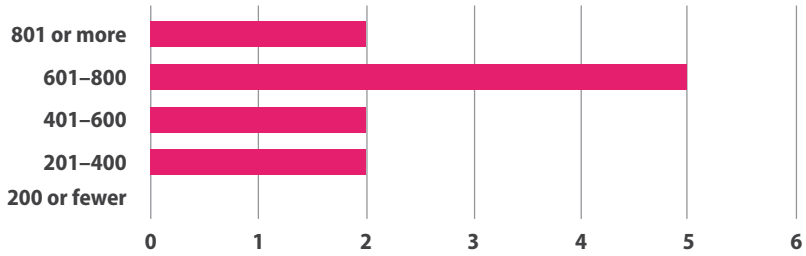




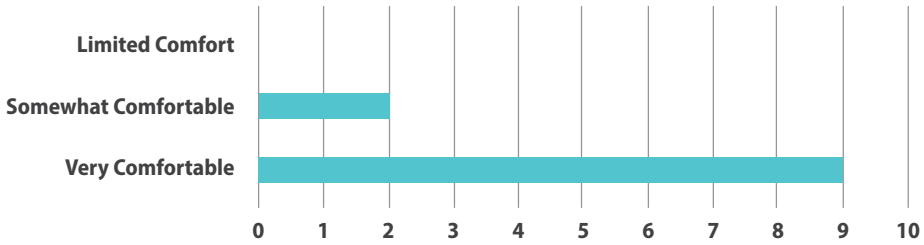
Years of Teaching Experience



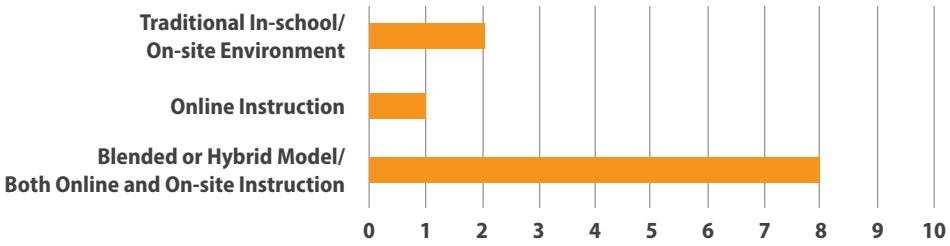
School Size

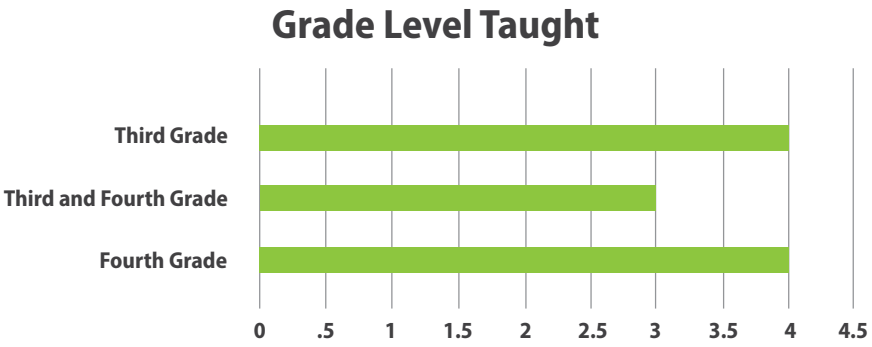


Technology Comfort Level



Instructional Delivery Model





Teacher Perceptions

Teachers shared their perceptions of QuaverSEL on a wide range of topics.

Frequency of Use

More than one third (36%) of the teachers reported using QuaverSEL three days a week. About one fifth (18%) of the teachers indicated they provided QuaverSEL instruction four days a week, and another fifth (18%) reported using QuaverSEL five days a week.

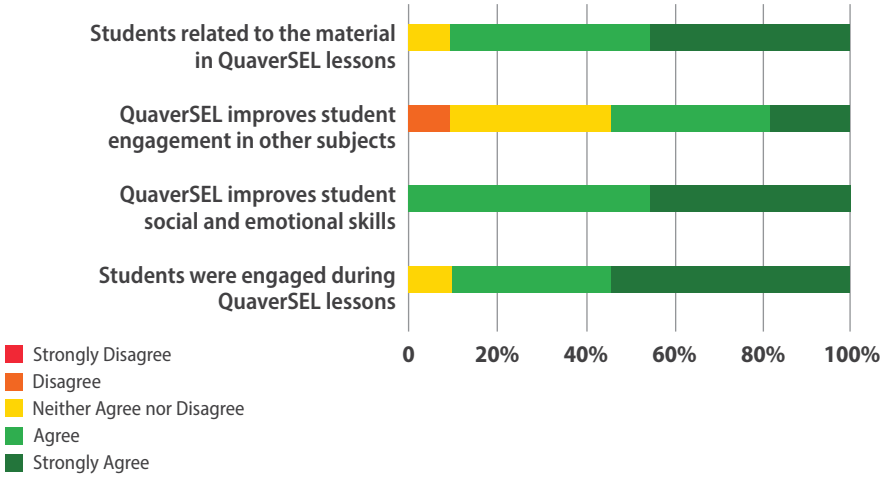
Teachers were asked how many minutes per week they provided QuaverSEL instruction. About one third (36%) of the teachers indicated that they used QuaverSEL 30 minutes or less per week. About a quarter (27%) of the teachers used QuaverSEL for instruction between 31 and 60 minutes per week, and another quarter (27%) provided QuaverSEL instruction between 61 and 90 minutes per week.

Student Engagement and Skill Improvement

All (100%) of the teachers agreed that QuaverSEL improves student social and emotional skills. Almost all (92%) of the teachers agreed that students related to the material in the QuaverSEL lessons, and almost all (92%) of the teachers agreed that students were engaged during QuaverSEL lessons.

Figure 4

Teacher Judgments of Student Engagement and Skills Development



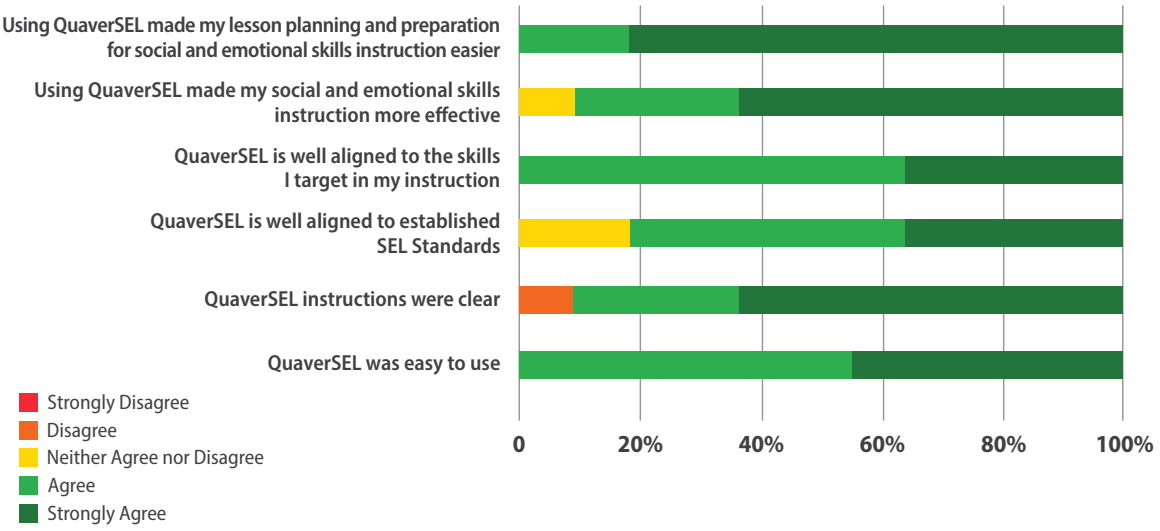
QuaverSEL and Teacher Support

Teachers were asked a series of questions about clarity, ease of use, and standards alignment. Almost all (92%) of the teachers agreed that QuaverSEL was clear and easy to use. Nearly all (92%) of the teachers agreed that QuaverSEL is effective in helping plan and prepare SEL lessons and SEL instruction.

QuaverSEL provides several resources to help teachers plan for and deliver instruction. Teachers were asked to share their perceptions of the QuaverSEL resource collection. Teachers reported that "Lessons" was the resource collection they used most; about three quarters (73%) of the teachers identified this as their most-used resource. SELMusic was identified by about one fifth (18%) of the teachers as the resource they used most. The remaining resource collections were not used frequently by responding teachers.

Figure 5

QuaverSEL Use and Teacher Support



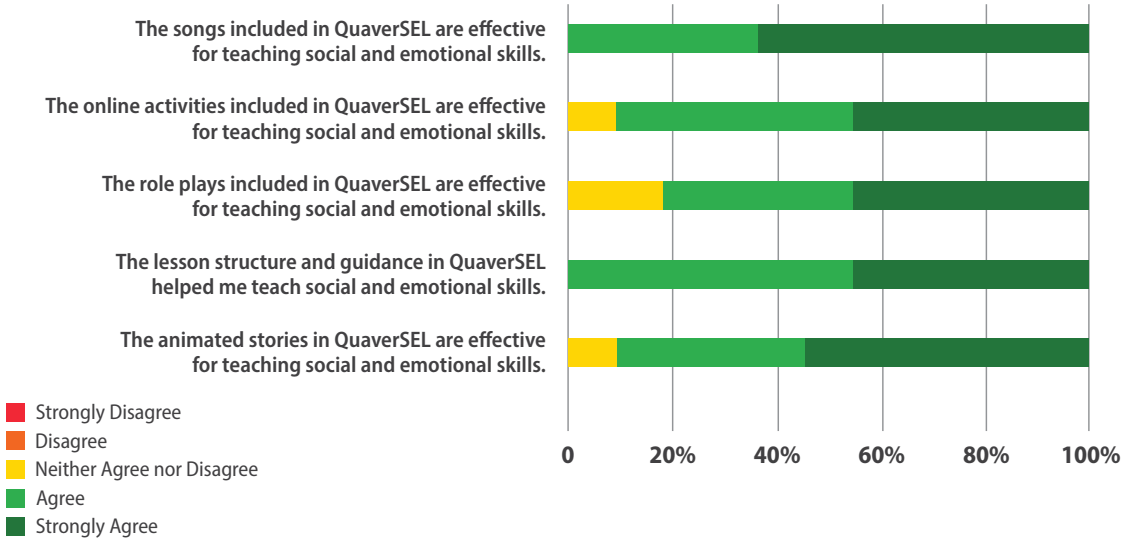
Resource Effectiveness

Teachers were also asked to rate the effectiveness of several of the included resources. Nearly all (92%) of the teachers indicated that the songs, online activities, and animated stories were effective for developing students' social and emotional skills. Similarly, about four fifths (84%) of the teachers rated the role plays as effective.

All (100%) of the teachers agreed that the lesson structure and guidance provided in QuaverSEL helped them teach social and emotional skills.

Figure 6

QuaverSEL Resource Effectiveness



QuaverSEL Effectiveness for Developing SEL Skills

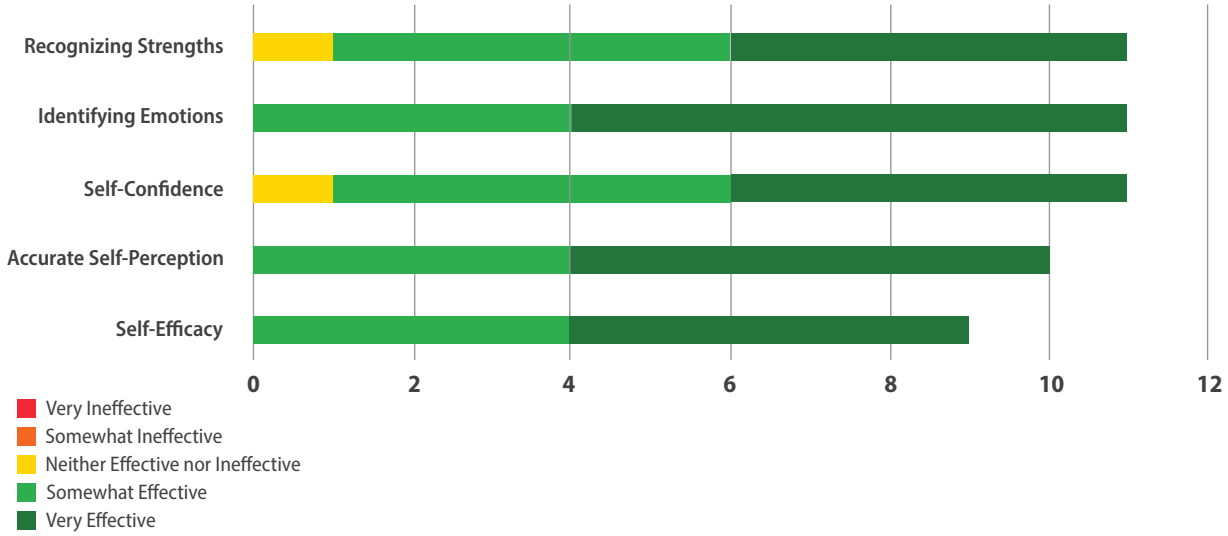
Teachers were asked to judge the extent to which QuaverSEL was effective in developing each specific skill within the five SEL categories measured. Each subskill was judged using a five-point rating scale, ranging from "very ineffective" to "very effective." Respondents were also given the option "neither effective nor ineffective."

Teachers rated the effectiveness of the 33 social and emotional skills within the 5 CASEL categories. Overall, QuaverSEL was seen as effective; all but four of the skills were judged by more than 90% of the teachers to be effective at improving students' social and emotional skills. (See Figures 7–12)

Self-Awareness. QuaverSEL was seen as effective in developing self-awareness skills, with all five of the skills within the self-awareness category judged by 90% or more of the teachers to be effective at improving students' self-awareness skills. Teachers felt that QuaverSEL was particularly effective in developing students' ability to identify emotions, with all (100%) of the teachers indicating that QuaverSEL was "very effective" or "somewhat effective" at improving students' ability to identify emotions.

Figure 7

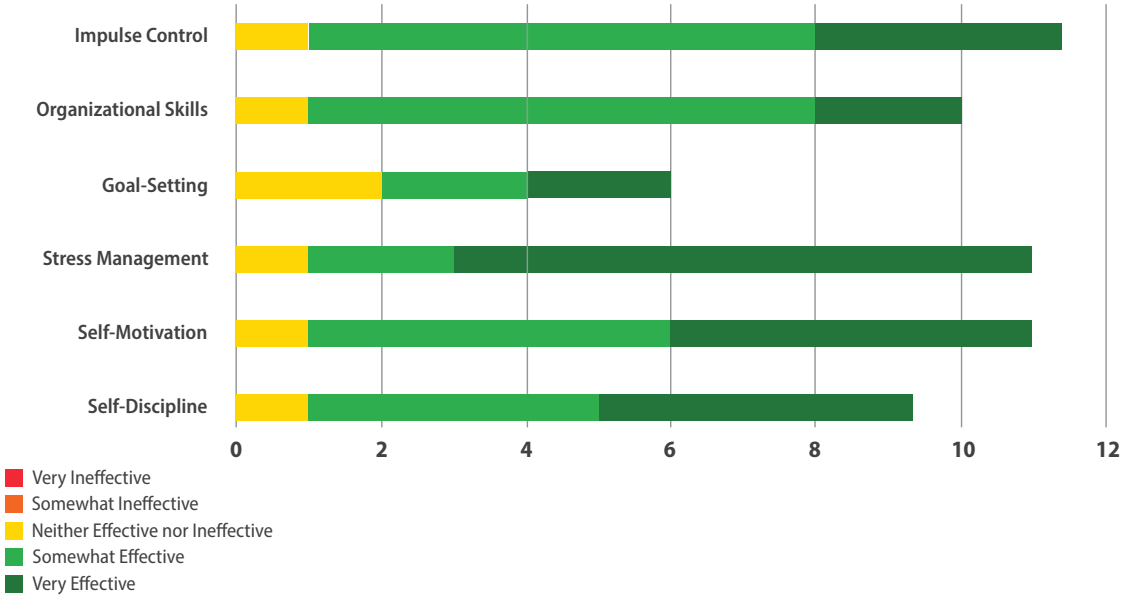
Teacher Judgments of the Effectiveness of QuaverSEL for Developing Self-Awareness SEL Skills



Self-Management. Teachers reported that QuaverSEL was effective in developing students' self-management skills, with all but one of the six skills within self-management judged by 90% or more of the teachers to be effective at improving students' social and emotional skills. Teachers felt that QuaverSEL was particularly effective in developing students' stress-management skills, with four fifths (80%) of the teachers indicating that QuaverSEL was "very effective" at improving students' stress-management skills. Teachers reported that QuaverSEL was less effective in developing goal-setting skills.

Figure 8

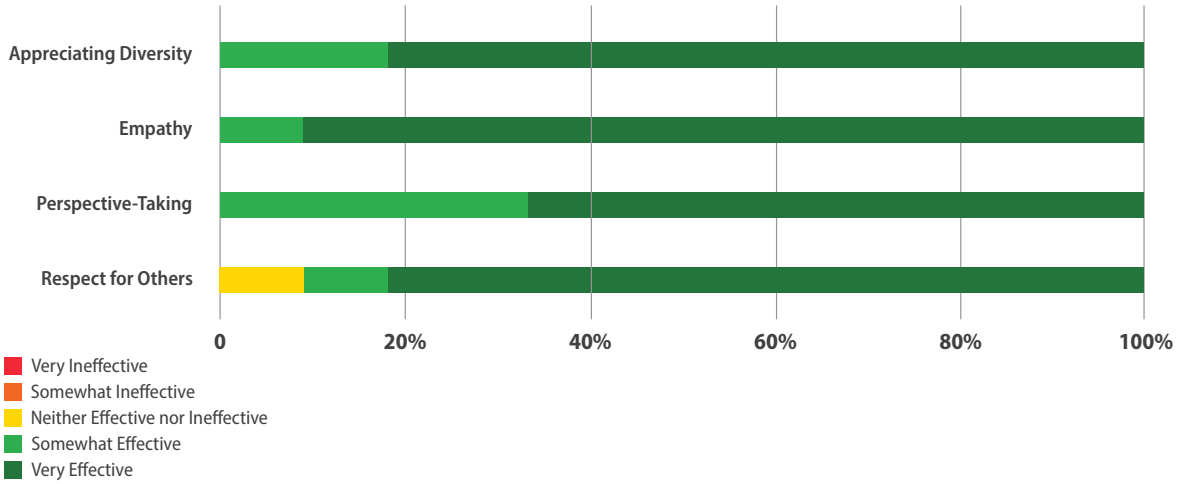
Teacher Judgments of the Effectiveness of QuaverSEL for Developing Self-Management SEL Skills



Social Awareness. QuaverSEL was seen as effective in developing students' social-awareness skills, with all four skills within social-awareness skills judged by 90% or more of the teachers to be effective at improving students' social-awareness skills. Teachers felt that QuaverSEL was particularly effective in developing students' empathy, with 90% of the teachers indicating that QuaverSEL was "very effective." Nearly three quarters (83%) of the teachers indicated that QuaverSEL was "very effective" at improving students' appreciation of diversity.

Figure 9

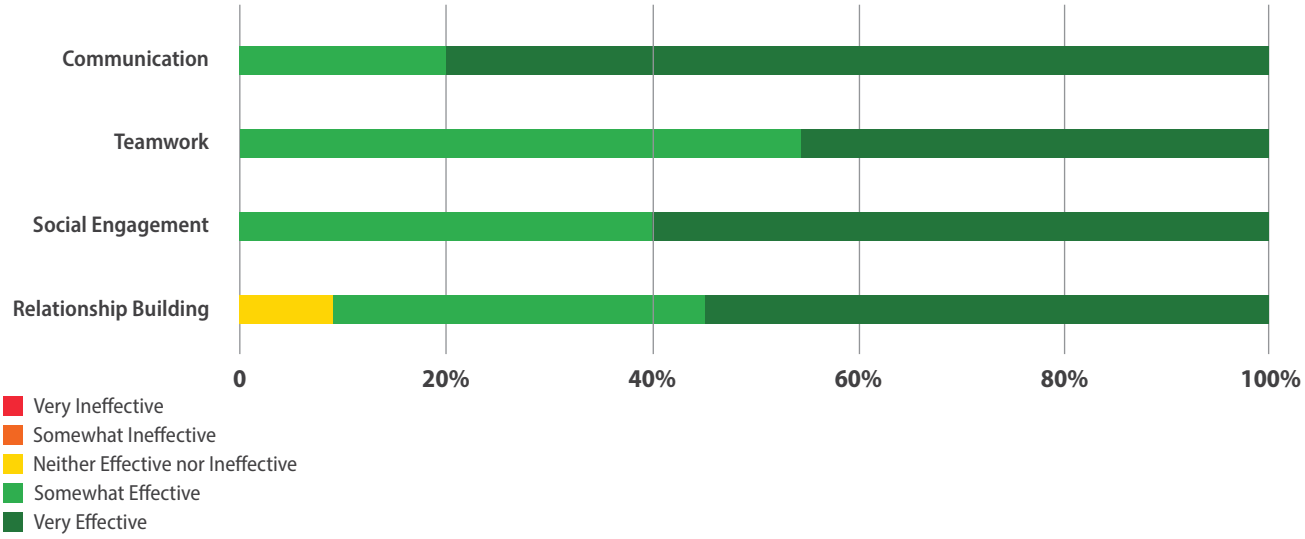
Teacher Judgments of the Effectiveness of QuaverSEL for Developing Social Awareness SEL Skills



Relationship Skills. Teachers saw QuaverSEL as an effective tool for developing students' relationship skills, with all four skills within relationship skills rated by 90% or more of the teachers to be "very effective" or "somewhat effective" at improving students' relationship skills. Teachers felt that QuaverSEL was particularly effective in developing students' communication skills, with four fifths (80%) of the teachers indicating that QuaverSEL was "very effective" at improving students' communication skills.

Figure 10

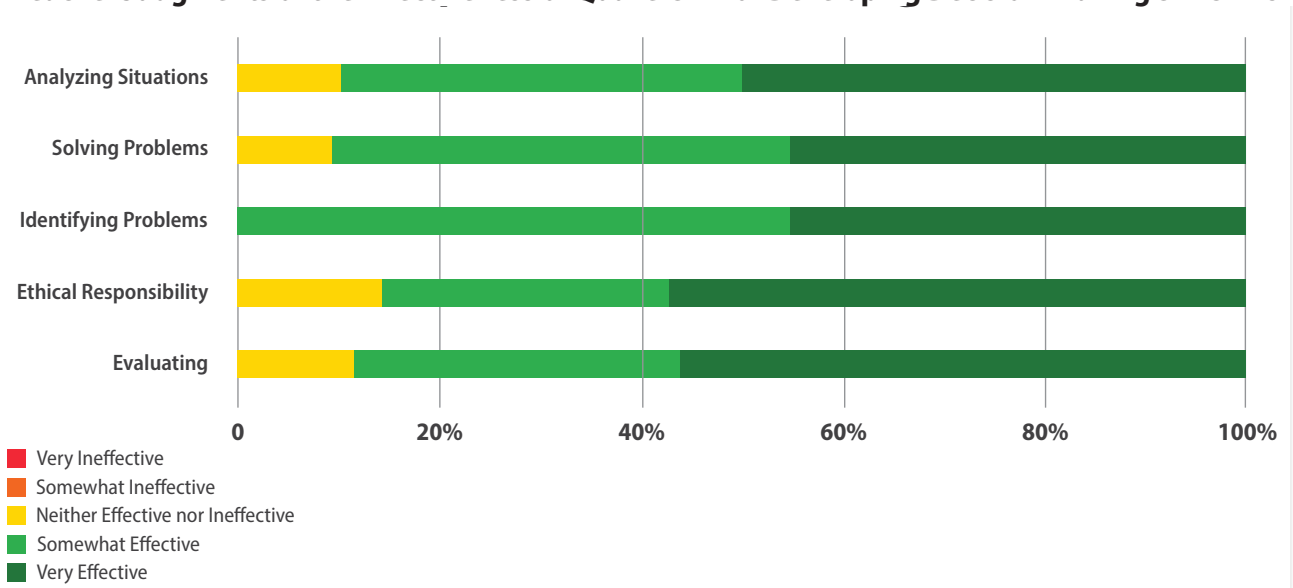
Teacher Judgments of the Effectiveness of QuaverSEL for Developing Relationship SEL Skills



Responsible Decision-Making. QuaverSEL was seen as effective in developing students' decision-making skills, with four of the five skills within responsible decision-making judged by 90% or more of the teachers to be "very effective" or "somewhat effective." Ninety percent or more of the teachers indicated that QuaverSEL was "very effective" or "somewhat effective" at improving students' skills in identifying and solving problems.

Figure 11

Teacher Judgments of the Effectiveness of QuaverSEL for Developing Decision-Making SEL Skills

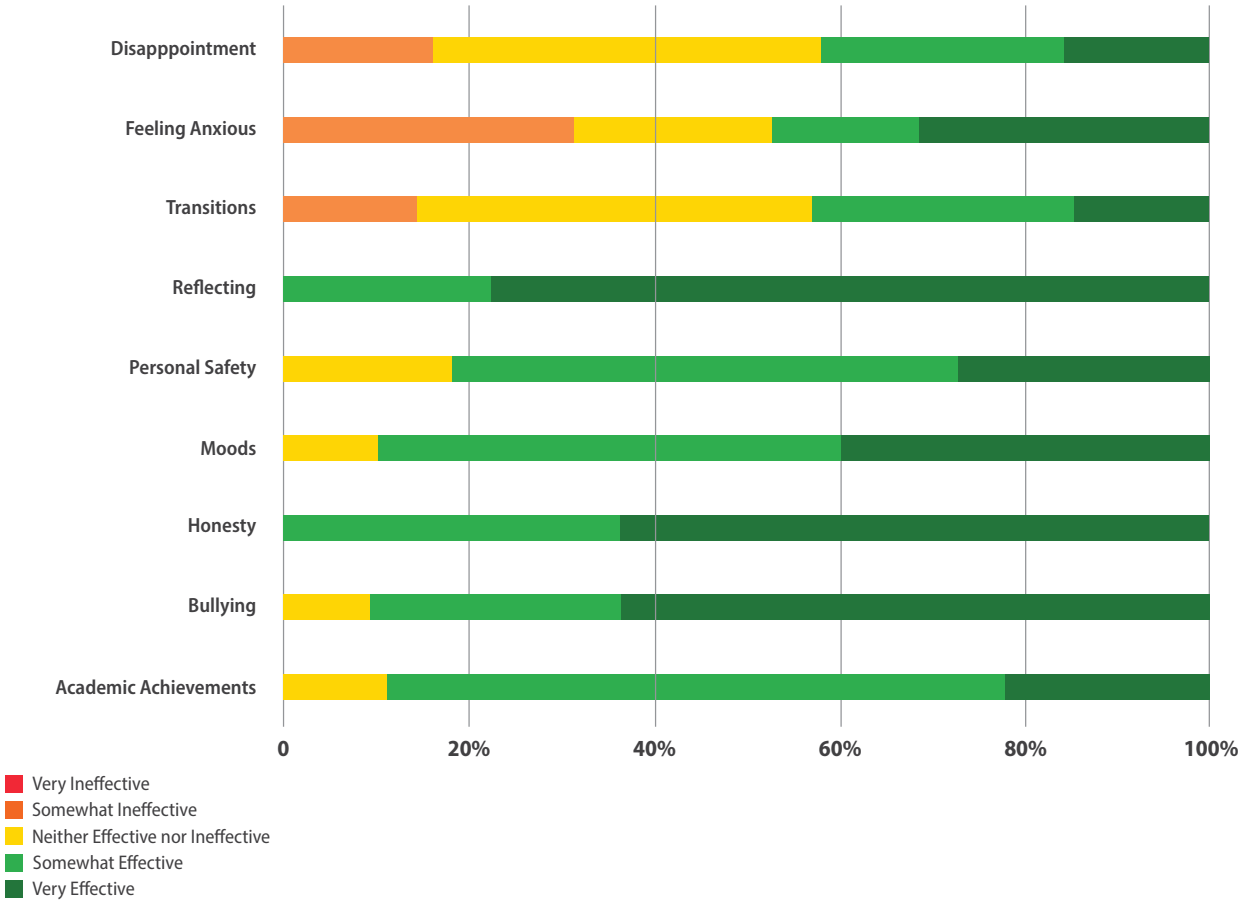


SELPlus. QuaverSEL includes additional instructional resources to address social and emotional skills not included within the CASEL framework. Overall, teachers found QuaverSEL to be effective in developing the nine additional student skills. Five of these additional nine skills were seen as "very effective" or "somewhat effective" by 90% of the teachers, while the remaining three skills were seen as "very effective" or "somewhat effective" by 80% of the teachers.

Teachers felt that QuaverSEL was particularly effective in developing students' skills related to bullying and reflection. All (100%) of the teachers reported that QuaverSEL was "somewhat effective" or very effective," in developing students' skills related to bullying and reflection.

Figure 12

SELPlus



What did you like best about QuaverSEL?

Teachers were asked a series of questions requiring an open-ended text response.

Teachers were asked what they liked best about QuaverSEL. Twenty comments were provided. Two fifths (40%) of the comments about what they liked best referred to the songs/music. Another quarter of the comments (25%) indicated how engaging the program was or cited other aspects of student focus. Nearly a fifth (15%) of the comments about what they liked best referenced aspects of the program that fostered discussion. No other comments appeared twice.

What was your favorite lesson or activity?

Teachers were asked to indicate their favorite QuaverSEL lesson or activity. While all (100%) responding teachers shared a favorite lesson or activity, there was no single lesson or activity frequently cited.

How can QuaverSEL be improved to better meet your needs?

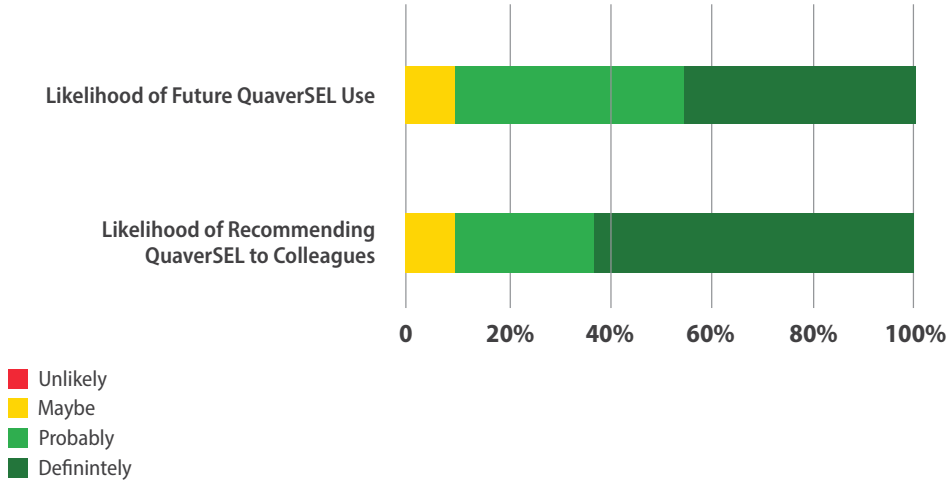
About a quarter (27%) of the improvement comments called for better program navigation for both students and teachers; another quarter (27%) recommended providing a table of contents with topics to make it easier to find what is needed and to allow fewer clicks to get to the lessons. About a fifth (17%) of the teachers recommended creating ways for students to interact with the content more on their own. No other comment about improvement was made more than once.

Likelihood of Future Use and Recommendation to Colleagues

Teachers were asked to indicate the likelihood that they would use QuaverSEL in the future and that they would recommend QuaverSEL to colleagues. Nearly all (92%) of the teachers indicated that they would "definitely" or "probably" use QuaverSEL in the future and that they would "definitely" or "probably" recommend QuaverSEL to their colleagues (Figure 13).

Figure 13

Likelihood of Using QuaverSEL in the Future and Recommending QuaverSEL to Colleagues



Summary

The study evaluated the effectiveness of QuaverSEL, an educational program targeted at developing students' social and emotional skills. Using a quasi-experimental design, the study compared social and emotional skills growth between a treatment group (students who received instruction using QuaverSEL) and a matched control group (students who did not receive instruction using QuaverSEL). Teachers in both study groups rated the social and emotional skills of students (using the SELI-T) at the beginning and end of the study, and students' social and emotional growth between the treatment and control groups was compared. The study is consistent with the requirements for a tier 2 study defined by IES (US Department of Education) and study requirements for inclusion by CASEL in the CASEL SELect Programs.

The study also conducted a qualitative investigation of teachers' perceptions of QuaverSEL effectiveness. Teachers completed a survey of teacher perceptions of overall effectiveness, and of specific social and emotional skills within each of the five major social and emotional skills areas. Teachers also shared their perceptions of specific program features and indicated their intent to use QuaverSEL in the future and likelihood of recommending the program to colleagues.

Results

The treatment group (students receiving instruction using QuaverSEL) achieved significantly greater growth in social and emotional skills than their peers in the control group (students not receiving QuaverSEL instruction). As measured by the total social and emotional skills level score, on average, the treatment group improved their social and emotional skills by forty percent of a standard deviation (ES=.40) more than did the control group. Ratings comparisons of the five component skills making up the total score were consistent with this finding. The effect size for the five component skills ranged from .26 to .49. The effect is most pronounced for the skills responsible decision-making (ES=.49), self-awareness (ES=.40), and self-management (ES=.39).

The effect for study group-grade level interaction was not significant. It appears that whether you were a third or fourth grader, QuaverSEL was equally effective. Similarly, student gender and student ethnicity do not appear to meaningfully impact on the effectiveness of QuaverSEL instruction. The interaction of study group with student gender and the interaction of study group with student ethnicity were not significant, suggesting that QuaverSEL is equally effective for boys and girls and for students of various ethnic backgrounds.

Teacher perceptions of QuaverSEL were largely consistent with the effectiveness findings from the quasi-experimental study. More than 90% of the teachers reported that they would "definitely" or "probably" use QuaverSEL in the future and would "definitely" or "probably" recommend QuaverSEL to their colleagues. The teachers found QuaverSEL "very effective" or "somewhat effective" for nearly all of the subskills in instructing social and emotional skills.

Conclusion

Students receiving QuaverSEL instruction show considerably more growth in social and emotional skills, particularly in self-awareness, self-management, and responsible decision-making. The observed effect sizes of .26 to .49 are particularly impressive considering the length of the study; students achieved those gains over about 16 weeks of instruction. Moreover, given competing instructional priorities, this level of growth is substantial; in most cases, students received instruction one to two days per week and on average 30 to 60 minutes per week.

The survey responses of participating teachers echoed the quasi-experimental study findings. The teachers reported that QuaverSEL was either "very effective" or "somewhat effective" for nearly all the skills within the five social and emotional skills areas measured, and "strongly agreed" or "somewhat agreed" that nearly every feature of QuaverSEL was effective at achieving their instructional goals. Combined with their reported high likelihood of future use and high likelihood of recommending QuaverSEL to colleagues, this study can conclude that teachers thought QuaverSEL was an effective instructional tool.

Limitations

While the study meets ESSA and CASEL requirements, these findings should be validated in other U.S. regions, in other school environments, over longer periods of time, with larger samples, and at different grade levels to lend further support for these conclusions. Moreover, cross-validation of these findings with other measures of social and emotional skills would be beneficial. This study was conducted in elementary schools with 200 to 800 students. The schools were in suburban (70%) and urban (30%) areas. Schools seeking to improve students' social and emotional skills that fit this school profile should be particularly interested in adopting QuaverSEL to support that goal.

In short, these study findings support the conclusion that using QuaverSEL for social and emotional skills instruction for elementary-level students significantly improves students' social and emotional skills.

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