

2017 - 2018 School Year SPARK Curricula Analysis: Changes Over Time

A Report to
The SPARK Initiative
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Public Version

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Executive Summary

In 2017, The SPARK Initiative engaged an external research team from Group Victory, LLC to conduct an outcome evaluation on the SPARK Curricula. The SPARK Initiative is a nonprofit organization in Brandon, Florida focused on cultivating human potential and resilience by providing education, mentoring, and coaching that increases individuals understanding of the mind. Group Victory LLC is an organization development firm in Fort Lauderdale, Florida that provides program evaluation support. The SPARK Curricula is a mentoring curriculum created by the SPARK Initiative to promote youth resiliency, emotional well-being, and academic success.

Together, The SPARK Initiative and the Group Victory evaluation team designed a randomized controlled trial study with pre and post intervention measurement to assess the impact of the SPARK curriculum on the following youth attributes:

- Level of knowledge of curriculum content
- Level of communication, decision making, and problem solving skills
- Level of emotional regulation
- Level of resilience

(See Appendix A for the Logic Model)

This report, which documents the impact of the SPARK Curricula on positive youth development, contains the following components:

- SPARK Curricula description
- Program fidelity adherence
- Student attendance
- Study participant characteristics
- Research methods
- Outcome evaluation findings

In January 2018, six schools agreed to participate in evaluating the SPARK Curricula. In the middle of January, parents signed consent forms for their youth to participate. The six schools participating in the evaluation included two high schools, two private schools for students receiving special education, and two career centers categorized as “Alternative Education” schools by the Hillsborough County School District.

Overall, 222 students participated in the study representing six schools and 14 classrooms. Surprisingly, only 13 students were lost to attrition over time leaving 209 students completing both a pre- and post-questionnaire with 112 students randomly assigned to receive the SPARK Curriculum and 97 students randomly assigned to receive the prescribed school curriculum. The demographic characteristics did not differ between the two groups of students

and the two groups did not differ on pre-intervention scales.

The level of attendance of students in the SPARK group showed excellent attendance rates indicating the students received an adequate amount of the program. Fidelity ratings revealed outstanding adherence to program objectives by program facilitators.

The 67 students over the age of 15 who received the SPARK showed significant improvements in the four attributes measured compared to the 64 students who did not receive the curriculum. The 45 students under the age of 15 who received the SPARK curriculum did not show any significant improvements and did not differ from the 33 students who did not receive the curriculum. It should be noted, however, that most students under 15 years of age were being served in two, small, private, special education centers for students with learning challenges such as learning disabilities and emotional disturbances. This population and their school environments are very different from the school environments for the older students. These findings warrant future investigation.

Results from the SPARK Curricula study indicate the following self-reported outcomes for students 15 years of age or older:

- Significant improvement in their knowledge of the SPARK curriculum with 72% of the students 15-years-old or older showed positive change on their knowledge of the SPARK curriculum while only 33% of the students without exposure to SPARK showed positive change,
- Significant improvement in their decision making and problem-solving skills with 67% of the students 15-years-old or older showed positive change on their communication, decision making and problem-solving skills while only 34% of the students without exposure to SPARK showed positive change,
- Significant improvement in their emotional regulation with 64% of the students 15-years-old or older showed less difficulty in regulating their emotions while only 25% of the students without exposure to SPARK had less difficulty in this area, and
- Significant improvement in their level of resilience in the areas of mastery and relatedness with 66% of the students 15-years-old or older showed positive change on their levels of resiliency while only 36% of the students without exposure to SPARK showed positive change in this area.

Future evaluation could explore youth populations under the age of 15 years served in general education settings. Additionally, the scope of the research could be expanded to explore other important outcomes such as changes in grades and rates of disciplines reported over time. In addition, qualitative data could be collected from key stakeholders on the depth and essence of their experiences with the SPARK curricula.

Program Description

The *Speaking to the Potential, Ability, and Resilience inside every Kid* (SPARK) Curricula is a mentoring curriculum designed to reduce risk factors, build resiliency, promote emotional well-being, and facilitate school success in elementary, middle, and high school students. The SPARK curricula consist of a Child Mentoring Curriculum for children ages 6 to 10 years old, a Pre-Teen Mentoring Curriculum for youth ages 10 to 13 years old, a Teen Mentoring Curriculum for adolescents ages 13 to 22 years old, and a Sex Education and Teen Pregnancy Infusion Program for students ages 13 to 22 years old. This research evaluates the SPARK Pre-Teen and Teen Mentoring Curricula delivered in a group format by S.P.A.R.K. facilitators in hourly sessions taught sequentially over 12 to 13 weeks.

The curricula cover relevant and relatable topics that help youth better understanding themselves and others, develop vital social and emotional skills, and access their leadership and creativity to foster academic achievement and healthy community functioning. The curricula are designed to be taught with at least one week between each of the lessons providing valuable time for participants to apply their new knowledge and skills to life experiences that are processed together before covering a new lesson.

The SPARK Pre-Teen Curriculum consists of the following 12 lessons with sessions 11 and 12 specifically designed as the last two lessons based on their review and culmination content:

- Connections and Goals
- Your Experience, Unlocked
- Decision Making, The SPARK Highway
- Feeling the Rainbow
- Finding Your SPARK
- Growing Your Creativity and Potential
- Self-Confidence
- Dealing with Stress and Anxiety
- Communication and Reactions
- Appreciating the Diversity Among Us
- The Future is Yours
- Graduation

The SPARK Pre-Teen Curriculum includes optional modules and lessons to be taught after the 10 core curriculum sessions based on specific participants' needs:

MODULES	LESSONS
Healthy Relationships	Navigating Relationships
Leadership	Understanding Your Community
	Using Your SPARK To Be a Good Role Model
	Bullying, Inside-Out
Life Skills	Academic Stress to Academic Success

The SPARK Teen Mentoring Curriculum is comprised of the following 13 lessons with sessions 12 and 13 specifically designed as the last two lessons based on their review and culmination content:

- Overview and Introduction
- You Experiencing you!
- Yep! That's Thought Too
- Your Personal Guide to Decision Making
- Habits Pulling You Around
- How State of Mind Influences Judgment and Reasoning
- Surviving Mood Swings
- Finding the SPARK in Your Stress
- Feeling Fear and Insecurity Without Fear and Insecurity
- The Inside-Out Nature of Self-Esteem
- Separate Realities
- Discovering You
- Graduation

The SPARK Teen Curriculum includes optional modules and lessons to be taught after the 11 core curriculum sessions based on specific participants' needs:

MODULES	LESSONS
Relationships	Cultivating Meaningful Relationships
	Dating & Healthy Relationships
	Your Values, Your Relationships, Your Decisions
Leadership	Your Community Engagement
	Mentoring and Leading From the Inside-Out
	Bullying Prevention From the Inside-Out
Life Skills	Academic Success
	College and Career Readiness
	Financial Stability

The SPARK Curricula was created in 2010 by The SPARK Initiative. The SPARK Initiative released the SPARK Pre-Teen and Teen Mentoring Curricula in 2016. The SPARK Initiative certifies SPARK facilitators through a comprehensive four-day professional training program. The Pre-Teen and Teen Mentoring curricula are intended to be delivered once a week and taught by certified SPARK facilitators.

Adherence

Fidelity refers the degree of adherence and accuracy associated with maintenance to an intended program approach and model. Measurement of fidelity compliance is critical to the assurance that program design and delivery are maintained by all individuals administering the intervention as intended. In addition, the higher the program fidelity, the more likely there will be consistency in impact.

The SPARK Initiative developed SPARK Curricula based on guiding principles and values, relevant age-specific topics and content, and associated subject matter and activities. SPARK curriculum lessons are specially designed and intentionally created to promote positive target population development and coping. As such, The SPARK Initiative seeks to ensure that all curriculum facilitators consistently adhere to SPARK Curriculum fidelity to yield the maximum benefit among participating youth.

By measuring fidelity, the following questions can be answered:

- Is the SPARK curricula being delivered as intended?
- Are participants receiving the intended program dosage?
- Is the quality of program delivery acceptable?

During the 2017 - 2018 academic year, fidelity compliance among SPARK facilitators was measured using the following three scales that consisted of items representing SPARK Curriculum training, preparation, and administration requirements:

- **Session Fidelity Scale** which contains 23 items and is completed by the SPARK facilitator as a self-assessment immediately following each SPARK Curriculum session. It is submitted to The SPARK Initiative supervisor on a weekly basis. Fidelity Scale responses and results are reviewed individually with the facilitator following completion. (See Appendix B)
- **Supervisory Fidelity Scale** which contains the same 23 items as the Session Fidelity Scale and is completed through two random session observations by The SPARK Initiative supervisor during a SPARK Curriculum session series. Fidelity Scale responses and results are reviewed individually with the facilitator following completion. (See Appendix C)
- **Annual Program Fidelity Scale** which contains 14 items and is administered annually by the facilitator as a self-assessment upon completion of a full SPARK Curriculum session series. It is also completed by The SPARK Initiative representative as an observation of the facilitator's administration of a full SPARK Curriculum session series. Fidelity Scale responses and results are reviewed individually with the facilitator following completion. (see Appendix D)

These fidelity scales record general facilitator, program site, and target population information and measure curriculum administration through quantitative and qualitative data. The scales include statements associated with program delivery as designed and intended to be rated on a 1 to 4 scale with "1" representing "Not met" and "4" representing "Met." The statements on the Session Fidelity Scale and Supervisory Fidelity Scale are the same. Sample statements include "follow the lesson content," "approach represents The SPARK Initiative values," "knowledgeable of subject matter," "answer questions appropriately," "keep presentation, activities, and discussion focused on lesson objectives," and "promote participants' potential and resiliency." The statements on the Annual Program Fidelity Scale focus on training,

preparation, and administration. Sample statements include “trained on administering the SPARK Curriculum,” “teaches core lessons in sequence,” and “incorporates mentoring within program delivery.” All scales have narrative sections for rater comments and recommendations on curriculum administration.

In the current analyses, the SPARK curriculum was delivered in 7 classrooms by 2 facilitators. A Session Fidelity Scale was completed by each facilitator for all 13 SPARK sessions in each classroom. The average ratings across the 7 classrooms and the 13 sessions was 3.94.

The agreement on fidelity ratings between the facilitator and the supervisor was also examined. Four sessions across 4 different classrooms were rated by both a facilitator and supervisor. Facilitator and supervisor ratings of the same session were very similar with the average rating for Facilitator 1 as 3.97, and the average supervisor rating of the same sessions as 3.83. There were similar results for Facilitator 3 and supervisor, 3.98 and 3.92 respectively. Results from the “exact agreement methods” revealed that the facilitator and the supervisor agreed on fidelity ratings 85% of the time. (See Table 1) (See Appendix E for a sample rating chart)

Table 1. Fidelity Ratings by Facilitators for 13 sessions of SPARK Curriculum and Facilitator and Supervisor Fidelity ratings across single session of SPARK Curriculum delivered across classrooms						
School	Facilitator	Classroom	Facilitators' average fidelity rating across 13 sessions in classroom	Single session average rating by Facilitator	Single session average rating by Supervisor	“Exact Agreement” between single session ratings by Facilitator and Supervisor
2	3	3	3.96	4.00	3.82	83%
1	3	1	3.96	3.91	3.91	91%
3	3	5	3.98			
5	3	9	3.96			
6	1	15	3.00	4.00	3.97	87%
6	1	13	3.97	3.91	3.65	78%
4	1	7	3.98			
Average	4 classrooms for Facilitator 3 and 3 classrooms for Facilitator 1	7 classrooms	3.83	3.96	3.84	85%
Note: Two additional classroom (School 5, classroom 11 and School 6, classroom 17) received SPARK and fidelity ratings were collected but these classrooms were not randomly assigned so they were not included in these analyses.						

In a few instances, both facilitators self-ratings were not rated a “4” representing “Met” on the following items:

- “use the relevant materials with each lesson”
- “conduct the activities associated with each lesson”
- “spend the relevant amount of time on each activity”
- “incorporate scenarios with each lesson”
- “keep the lesson within the time frame”

Facilitator 1 was self-rated less than “Met” on some of these items more often than Facilitator 3 as well as on “follow the lesson content” and “manage group dynamics effectively.” Facilitator 3 was self-rated less than “Met” more often than Facilitator 1 on “structure the lesson with a beginning, middle, and end.”

Facilitators and supervisors were generally in agreement with consistent ratings of “Met” on 20 of the 23 fidelity scale items. Items upon which facilitators and supervisors frequently disagreed with supervisors rating less than “Met” included the following items:

- “Incorporate questions and answers sessions within each lesson”
- “Ask participants if there are any questions or concerns before ending a lesson”
- “Answer questions appropriately”

Based on these fidelity measurement results which consistently represent significantly high fidelity and fidelity compliance ratings, it appears that SPARK facilitators are delivering the SPARK curriculum with adherence to program fidelity at program sites with participating youth.

Student Attendance

Student attendance in SPARK activities was monitored across SPARK sessions to help ensure that each student received an adequate amount or “dose” of the program. While every effort was made to “catch-up” a student who missed a session, recording attendance at each session was important to ensure changes in behaviors and attitudes could be associated with program participation. At each of the 13 SPARK sessions, the SPARK facilitator recorded attendance for each student. If a student withdrew from a school, the student record was marked as “withdrawn from school” and not included in the calculations. Attendance records were entered on an Excel spreadsheet for each SPARK classroom. (See Appendix F for a sample attendance record)

Seven classrooms at six schools were randomly assigned as SPARK intervention classrooms. The average attendance across all students was 90% and ranged from a low of 83% attendance at the South County Career Center to a high of 97% attendance at the Livingston Special Education classroom in Seffner. (See Table 2)

The lowest number of attended sessions was 10 and occurred for only 8 students. Most students attended 11 or 12 of the 13 SPARK sessions. This represents a very good attendance rate and suggests that students received an adequate amount of the SPARK curriculum to demonstrate program impact.

Table 2. Average Attendance Across SPARK Classrooms Randomly Assigned				
School	Classroom Code	Number of Students	Average Session Attendance	Average % Attendance
Livingston Seffner	1	17	12.18	94%
Livingston Riverview	3	17	12.59	97%
Blake High School	9	13	11.38	88%
Lennard High School	7	18	11.61	89%
South County Career Center	5	10	10.80	83%
Simmons Career Center	13	19	11.79	91%
Simmons Career Center	15	18	11.83	91%
Total / Average	-	112	11.74	90%
Note 1: Classrooms 7, 13, and 15 had three student each withdrawal from the school.				
Note 2: Two additional classrooms received the SPARK curriculum but were not randomly assigned. Classroom 11 at Blake High School has 16 students; 3 withdrawals, and an average attendance rate of 91%. Classroom 17 at Simmons Center has 8 students; 2 withdrawals, and an average attendance rate of 87%.				

Participants

Assignment of Participants to Condition by School

Students were randomly assigned either to receive the SPARK Curriculum (SPARK condition) or to not receive the curriculum (NO SPARK condition). Students completed a questionnaire before and after the delivery of the SPARK Curriculum. (See Appendix G for the Student Questionnaire and Appendix H for the Code Book)

There were 222 students who were randomly assigned to the two conditions and who completed a pre-intervention questionnaire. All but 13 (5.9%) of these students also completed a post-intervention questionnaire. Nine of these students had been assigned to the SPARK condition, and four had been assigned to the NO SPARK condition. The students who were lost to follow-up were all from Lennard High School (3 students) or Simmons Career Center (10 students). The students who were lost to follow-up did not differ significantly from the other students at those two schools who completed the post-intervention questionnaires on age ($t = 0.76, p = .449$), gender ($X^2 = 0.31, p = .579$), race ($X^2 = 0.84, p = .360$), or ethnicity ($X^2 = 1.55, p = .213$). The students who were lost to follow-up were less likely to received reduced lunch ($X^2 = 4.37, p = .037$). There was also no significant difference on any of the pre-intervention questionnaire scales. One scale difference approached significance, the students who were lost to follow-up had a higher mean total score on the 3 Principles Inventory ($t = 1.96, p = .0521$). For these tests, no other p values were below .10 and only 3 were below .25. Taken together, these results indicate that the students who were lost to follow-up did not differ from the students who were retained through follow-up. Therefore, attrition did not affect the results.

For the remainder of this report, only those students who were randomly assigned to the SPARK

or NO SPARK conditions and who completed both the pre and post questionnaires are included in the analysis. There were 209 such students, 112 were randomly assigned to SPARK and 97 were assigned to NO SPARK. The results of random assignment by school are presented in Table 3.

Table 3. Number of Participating Students with Pre and Post Data by Condition and School			
School	Number of Classrooms	Number of students randomly assigned to the intervention condition	Number of students randomly assigned to the comparison condition
Livingstone / Seffner Middle School	2	17	12
Livingstone / Riverview Middle School	2	17	13
South County Career Center	2	10	9
Lennard High School	2	18	19
Blake High School	2	13	12
Simmons Career Center	4	37	32
Total	-	112	97

Student Demographic Characteristics

Demographic characteristics for the 209 students who completed a pre- and post-questionnaire are presented in Table 4 and Table 5.

As seen in Table 4, the six schools had student samples with quite different characteristics. The mean age of the students at each school differed significantly from the others except for Simmons Career Center and South County Career Center. The means for these two schools did not differ from one another. Most schools had a majority of male students, but South County and Blake had mostly female students. The percentage of Latino students in the schools varied widely from <20% to >70%. All the schools that reported data on reduced lunch status had a large percentage of student receiving free or reduced lunch, an indicator of poverty. The schools also varied considerably on the racial make-up of the students.

Table 4. Demographic Characteristics of Students				
School	Average Age	% Male	% Free and Reduced Lunch FRL (Poor)	% Hispanic / Latino
Livingstone / Seffner Middle School	12.5	58.6%	Unknown	17.2%
Livingstone / Riverview Middle School	11.0	60.0%	Unknown	40.0%

South County Career Center	17.7	26.3%	100.0%	47.4%
Lennard High School	14.7	62.2%	91.9%	70.3%
Blake High School	16.2	0.0%	88.0%	24.0%
Simmons Career Center	17.5	60.9%	88.4%	40.6%
Total	15.2	50.2%	90.7% of known (28.2% unknown)	41.2%

Table 5. Race of Students				
School	Race			
	Black	White	2 or more	Missing
Livingstone / Seffner Middle School	3.5%	75.9%	6.9%	13.8%
Livingstone / Riverview Middle School	13.3%	53.3%	10.0%	23.3%
South County	26.3%	10.5%	5.3%	57.9%
Lennard High School	16.2%	13.5%	0.0%	70.3%
Blake High School	68.0%	8.0%	8.0%	16.0%
Simmons Career Center	10.1%	47.8%	10.1%	31.9%
Total Sample	19.1%	38.3%	7.2%	35.4%

Equivalency of Conditions at Baseline

In order to evaluate the adequacy of the random assignment in equating the groups for each condition, the SPARK vs. NO SPARK groups were compared on demographic characteristics and on scales from the pre-intervention student questionnaire. The results for the comparison of demographic characteristics are presented in Table 6. The results for the comparison of pre-intervention questionnaire scales are presented below in the presentation of results on change over time.

Analysis of student characteristics by intervention condition indicated that the sample in the SPARK intervention and the control condition did not differ on any of the demographic characteristics, although the percent of males in the two conditions came close to attaining significance.

Table 6. Demographic Student Characteristics in the SPARK vs. NO SPARK Condition

	SPARK	NO SPARK	Statistic	P
Average Age (years)	15.2	15.1	$t = 0.34$	.7323
% Male	44.6%	56.7%	$\chi^2 = 3.02$	.0821
% White	37.5%	39.2%	$\chi^2 = 0.06$	.8038
% Hispanic	36.6%	46.4%	$\chi^2 = 2.06$	.1517
% Free/Reduced Lunch	61.6%	69.1%	$\chi^2 = 1.48$	.4780

Outcome Analysis

Analyses of Change in Outcomes Over Time

Method for Analyses

Each of the scales contained within the student questionnaire that was administered before and after the intervention were analyzed to compare change over time for the SPARK condition vs. the NO SPARK condition. In the section below, each measure is described, and the overall level of the pre-intervention scores is discussed. The results for the group differences on each measure are presented in tabular form. For each measure, the average scores of each group for the pre-intervention score, post-intervention score, and the change over time (post minus pre) are presented. The average pre-intervention scores (SPARK vs. NO SPARK) are compared with a one-way analysis of variance (ANOVA). *[Note that this would normally be done using an independent groups t-test, however, a one-way ANOVA was chosen for following two reasons: (1) it yields the same conclusion as the t-test ($F = t^2$) and (2) using ANCOVA for the test of the difference in change over time, allow for both tests to be based on the F statistic].*

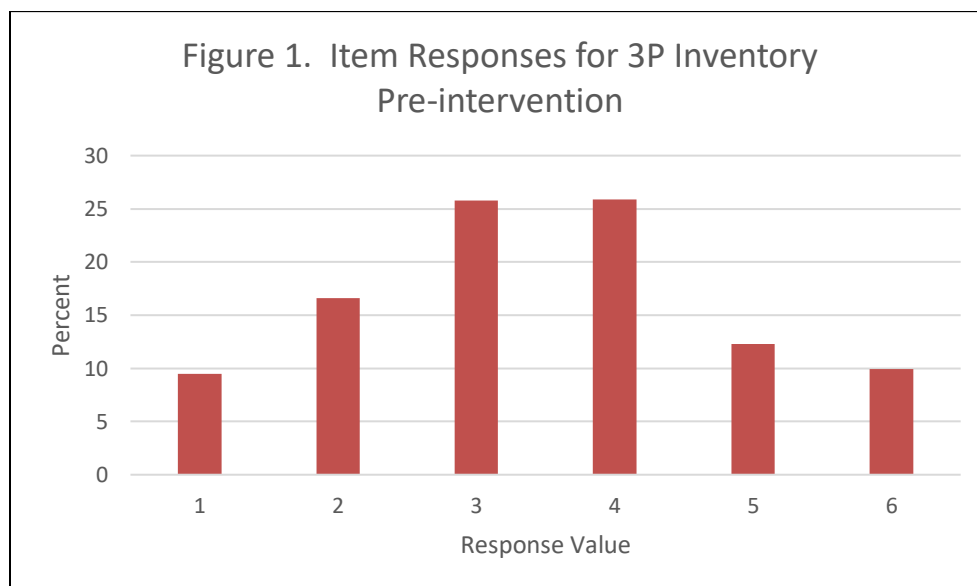
The average post-intervention scores for the two groups are compared using analysis of covariance (ANCOVA). In this latter analysis, the condition variable (SPARK vs. NO SPARK) is entered as a factor in the model, and the pre-intervention score for that measure is entered as a covariate (this corrects for bias due to pre-intervention group differences and regression to the mean). From this analysis, the test statistic for the condition variable using Type III Sums of Squares is reported (this represents the contribution of the condition variable after adjusting for pre-intervention group differences on the outcome measure). Then the effect size for that measure using Hedges' g is presented. For this statistic, 0.8 or more indicates a large effect, 0.5 to < 0.8 indicates a medium effect, and 0.2 - < 0.5 indicates a small effect, although these cutoffs are generally not applied rigidly.

Level of Knowledge of Curriculum Content

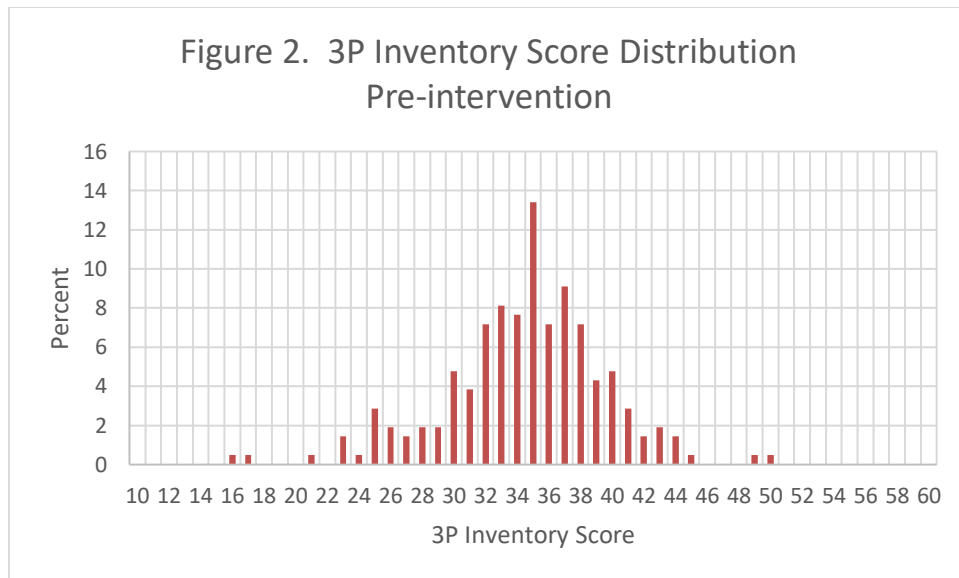
The youths' level of knowledge of the curriculum was measured using 10 items (Items 25 to 34 on the questionnaire) from the Three Principles Inventory (3PI) and four additional items (items 41 to 44) from Understanding Principles. Responses to the 3PI items range from 1 "Disagree Completely" to 6 "Agree Completely." Five items (27, 28, 29, 32 and 33) from the 3PI are reverse scored. High scores indicate more knowledge of the curriculum (so higher scores are more desirable). The range of total scores possible on the 3PI is from 10 to 60.

The four additional items on understanding the principles of the curriculum (items 41 to 44) have responses that range from 1 "Strongly Disagree" to 5 "Strongly Agree." Three items are reverse scored (42, 43, 44), and higher total scores reflect more knowledge of the curriculum.

Overall Level of Pre-intervention Scores. Distributions of responses to these scales from normative groups are not available. Therefore, to examine the levels of responses to these scales for the pre-intervention administration of the scale, the distribution of responses to the individual items are portrayed in Figure 1 and the distribution of total scores are portrayed in Figure 2 for the 3P Inventory (pre-intervention only).

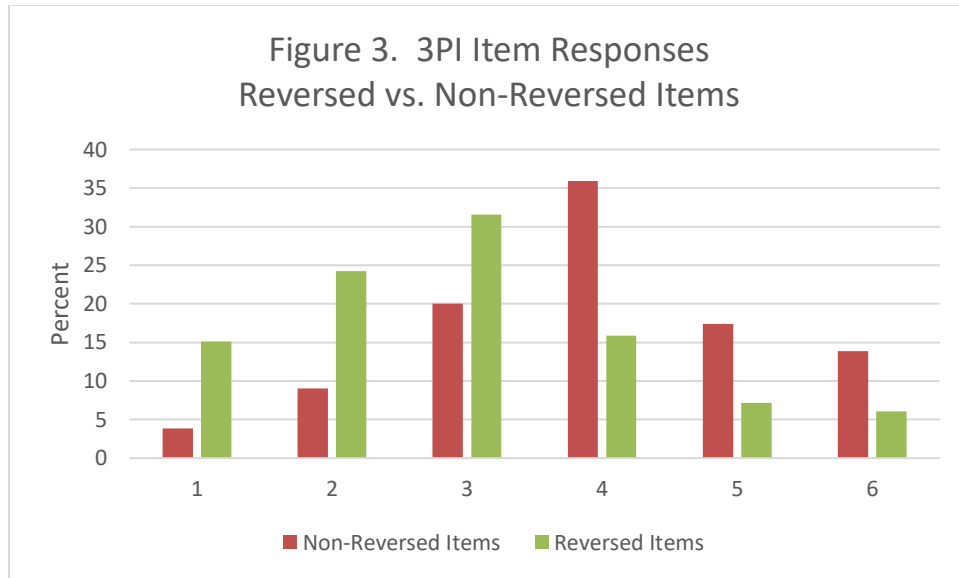


As illustrated in Figure 1, the most common responses given to the 3P Inventory items were a 4 "Agree Somewhat" on 25.9% of all items or a 3 "Disagree Somewhat" on 25.8% of all items. Overall, a substantial percentage of the full sample (48.1%) rated these items either a 4, 5, or 6 indicating agreement with the principles before the intervention began.



As illustrated in Figure 2, the distribution of total scores on the 3P Inventory are fairly symmetrically distributed around the median score of 35 which is the midpoint of the possible range of scores (10 to 60). Most of the scores cluster between 30 and 40. The overall mean total score for the pre-intervention 3P Inventory was 34.48 (SD = 5.11). This demonstrates there was not a “ceiling effect.” There was plenty of room in the distribution for scores to increase. However, whether the scores for the sample could be considered “low” at pre-intervention is difficult to determine without normative scores to which they could be compared.

An additional problem with the 3P Inventory data pertains to the reverse-scored items. Analysis of responses to those items (after reversing the scores) compared to the non-reverse-scored items is displayed in Figure 3. The two distributions are nearly mirror images of one another, whereas one would expect that they should have similar shaped distributions. This suggests that youths may have had a “response set” when completing these items, i.e. they may have tended to give the same numeric ratings for each item independent of what the item actually asks for. This obviously presents a problem in terms of validity of the scores, but in this case, this may also cause the distribution of responses to reflect lower scores on this scale than should actually be the case. Similarly, the internal consistency of the items of this scale (Cronbach's alpha) is low when using the reverse scored items (alpha = .42); however, when calculated using the items before reverse scoring, alpha = .67. Looking at just the non-reverse-scored items in Figure 3, the distribution indicates a clear modal response of 4 “Agree Somewhat.” Therefore, these youths are already tending to agree with the principles of the intervention.



Group Differences in Pre-Intervention Scores. The SPARK and NO SPARK groups did not differ on either the Knowledge of the 3PI Curriculum or the Understanding Principles scores obtained before the intervention. The mean scores for both groups were very close to and slightly below the midpoint for the range of possible scores on the measures.

Group Differences in Post-Intervention Scores. The post-intervention scores for the NO SPARK group were essentially unchanged from the pre-intervention scores on both the Knowledge of the 3PI Curriculum and the Understanding Principles scales. In contrast, the mean post-intervention scores for both measures were higher for the SPARK group. The change from pre- to post- after controlling for pre-intervention levels was clearly significant for the Knowledge of the 3PI scale but was not significant for the Understanding Principles scales. Higher scores reflect more knowledge of the principles, so the SPARK groups significantly increased their knowledge of the curriculum compared to the NO SPARK group. The Hedges' g effect size for the 3PI scores was 0.73 which is approaching a large effect size. The Hedges' g effect size for the Understanding Principles scores was 0.20 which reflects a small effect size.

Table 7. Knowledge of Curriculum and Understanding Principles Scores for students in the SPARK condition vs. NO SPARK condition – pre-intervention, post-intervention, and change					
	SPARK	NO SPARK	Difference	F	p
Knowledge of 3PI Curriculum					
Pre-Intervention	34.63	34.32	0.31	0.18	.6677
Post-Intervention	38.12	34.10	4.02	28.28	<.0001
Change (post – pre)	3.49	-0.22	3.71	--	--
Understanding Principles					

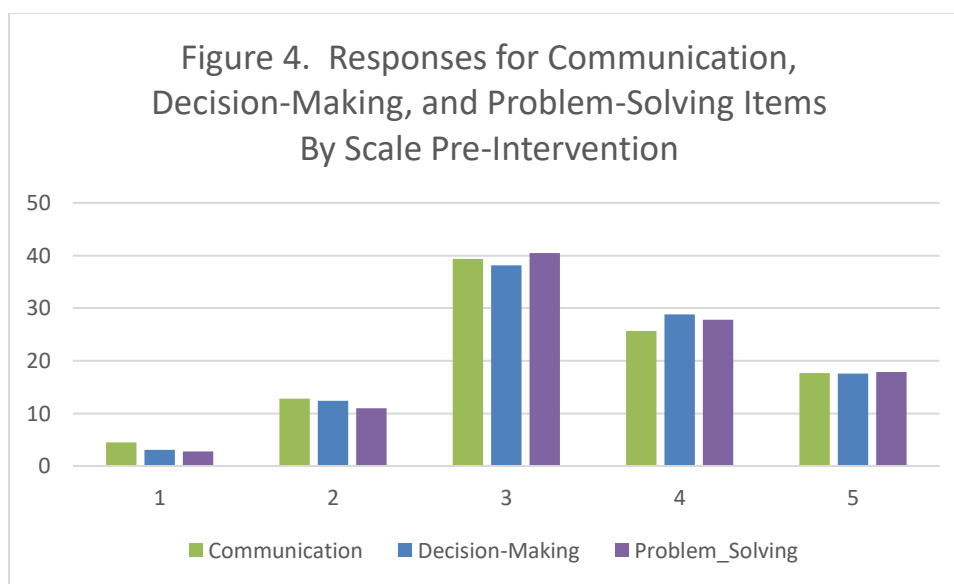
Pre-Intervention	10.46	10.46	0.00	0.00	.9991
Post-Intervention	11.10	10.60	0.50	2.17	.1418
Change (post – pre)	0.64	0.14	0.50	--	--

Level of Communication, Decision Making and Problem-Solving Skills

The Communication, Decision Making and Problem Solving (CDP) scale has 16 items and was developed by SPARK program staff. Scores range from 16 to 80 with higher scores more desirable.

The first 5 items represent Problem Solving Skills (items 65, 66, 67, 68, and 69), the second set of 5 items (items 70, 71, 72, 73, and 74) represent Decision Making Skills, and the last six items (items 75, 76, 77, 78, 79, and 80) represent Communication Skills. Items on these scales have responses that range from 1 “Never” to 5 “Almost Always.” While scores are calculated for the three subscales by simply totaling the values for the items, those total scores are divided by the number of items in the subscale so that the results for all 3 subscales can be presented on the same range of values.

Overall Level of Pre-intervention Scores. As there was not any normative data for these scales, the distributions of the item responses and total scores for the pre-intervention administration of these scales were examined.

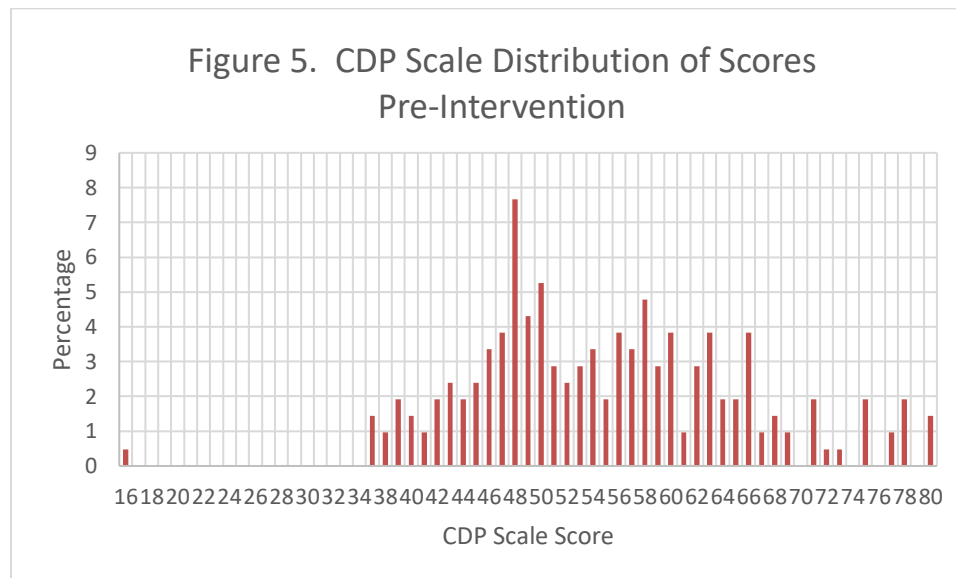


This figure indicates that the youths’ responses to the Communication, Decision-Making and Problem-Solving subscales are very similar. Most of the responses are a 3 “Sometimes” about 39% or 4 “Often” about 27%, indicating that a majority of students tended to believe they had these skills prior to the intervention.

An analysis of the internal consistency of the items for the full CDP scale in this sample

indicates that Cronbach's alpha = .90 which is quite high.

Since the subscale responses are so similar for total scores, the scores based on all 16 items will only be presented. These are presented in Figure 5. As can be seen in the figure, the scores are distributed mostly in the upper half of the possible range of scores. The mean score was 54.99 (SD = 10.46), and there does not appear to be a 'ceiling effect.' This means there is room in the distribution so that the scores could still increase significantly on follow-up after the intervention.



Group Differences in Pre-Intervention Scores. For the pre-intervention scores on the total Communication, Decision Making and Problem Solving (CDP) scale and the 3 separate subscales, the NO SPARK group had slightly higher mean scores than did the SPARK, although this difference did not attain statistical significance for any of the scores. The mean scores for both groups were a bit above the midpoint for the range of possible scores on the measures, suggesting that these students saw themselves as already having some of these skills before the intervention. There are no normative data available for these scales so it is not possible to evaluate these means in comparison to the population as a whole or to other groups.

Group Differences in Post-Intervention Scores. The post-intervention scores for the NO SPARK group were essentially unchanged from the pre-intervention scores on the total CDP scales and all three subscales. The means were actually slightly lower for each scale. This would suggest that the NO SPARK students' skills in these areas did not change over the time period of the intervention. In contrast, the mean post-intervention scores for all of these measures were higher than the pre-intervention scores for the SPARK group. The change from pre- to post-after controlling for pre-intervention levels was significant for the Total CDP scale and for the Decision-making and Problem-solving Skills subscales. The change only approached significance for the Communication subscale. Higher scores reflect more skill in each of these areas, so the SPARK group significantly increased these self-reported skills particularly with regard to Decision-making and Problem-solving compared to the NO SPARK group. All of these post-intervention differences obtained Hedges' g values that represented smallish effect sizes (0.23 – 0.39).

Table 8. Level of Communication, Decision-making and Problem-solving (CDP) Skill Scores for Students in the SPARK vs. NO SPARK condition – pre-intervention, post-intervention, and change

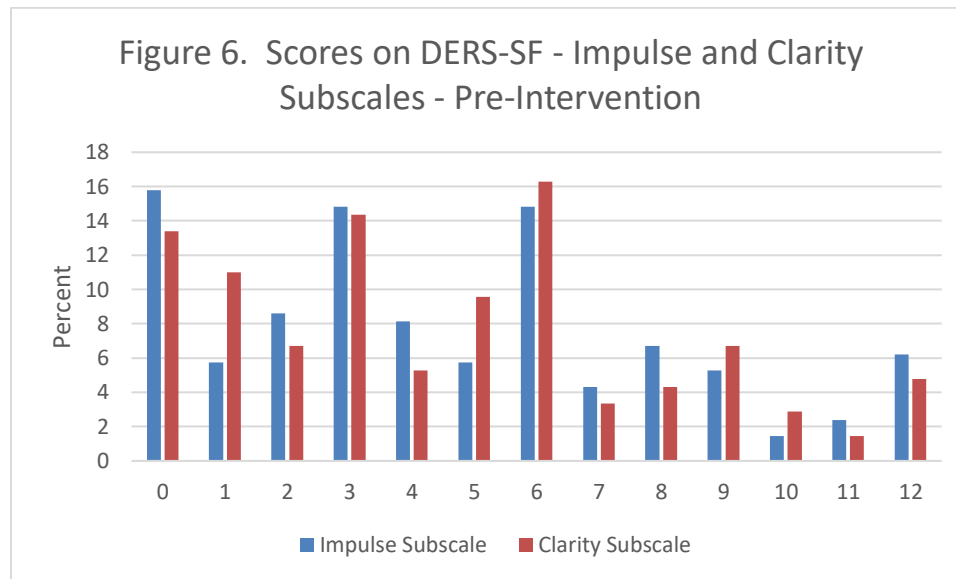
	SPARK	NO SPARK	Difference	F	p
Total CDP Score					
Pre-Intervention	53.99	56.13	-2.14	2.19	.1402
Post-Intervention	57.08	55.42	1.66	6.95	.0090
Change (post – pre)	3.09	-0.71	3.80	--	--
Communication Skills Subscale					
Pre-Intervention	3.32	3.48	-0.16	2.41	.1218
Post-Intervention	3.51	3.47	0.04	2.90	.0899
Change (post – pre)	0.18	-0.01	0.19	--	--
Decision-Making Skills Subscale					
Pre-Intervention	3.44	3.48	-0.04	0.17	.6765
Post-Intervention	3.60	3.43	0.17	4.53	.0345
Change (post – pre)	0.16	-0.05	0.21	--	--
Problem-Solving Skills Subscale					
Pre-Intervention	3.38	3.58	-0.20	3.39	.0671
Post-Intervention	3.61	3.49	0.12	7.97	.0052
Change (post – pre)	0.23	-0.09	0.32	--	--

Difficulties in Emotional Regulation

Two subscales of the short form of the *Difficulties in Emotional Regulation Scale* (DERS-SF) were included the Impulse scale (items 35 - 37) and the Clarity scale (items 38 - 40). For each subscale, the score is the total of the item values which range from 0 “Almost Never” to 4 “Almost always.” The range of scores is 0 - 12 for the subscales. An overall score is obtained by adding the two subscale scores. The range for this is 0 - 24. Lower scores are considered more desirable.

Overall Level of Pre-intervention Scores. The distribution of scores for the two subscales at pre-intervention are presented in Figure 7. The scores tend to cluster in the lower half of the distribution. This indicates the youths’ see themselves as having relatively low levels of difficulty with emotional regulation. In fact, 0 is the most common score on the Impulse scale and 3rd most common on the Clarity scale which would indicate no difficulty with emotional regulation. The

means for the Impulse scale and Clarity scale are 4.64 (SD = 3.50) and 4.546 (SD = 3.39), respectively. The mean for the total is 9.18 (SD = 5.71). For each of these, the mean is only about 1.5 standard deviations from the minimum possible score. This is approaching a “floor effect.” This makes it less likely to observe much improvement in the scores on these scales due to the intervention.



The Short Form of the DERS was developed by Kaufman et al., 2016. In this article, the authors scored the scales 1 - 5 rather than 0 - 4 and calculated the score as the mean of the items rather than the total of the items. For this study, the Impulse and Clarity subscales were re-scored using their method to compare the SPARK sample's scores with the samples that Kaufman et al. used in developing the scales. After re-scoring, the SPARK sample had means of 2.55 (SD = 1.17) on the Impulse subscale and 2.51 (SD = 1.13) on the Clarity subscale. The samples studied in the Kaufman et al. paper had a majority of females. These samples included some adolescents with emotional problems, but the majority of participants had no identified emotional problems. The authors reported means on the short forms of the Impulse and Clarity subscales of 1.62 (SD = 0.92) and 2.18 (SD = 1.08), respectively. Therefore, the scores obtained by the samples in the Kaufman et al. study were lower than those reported in the SPARK sample. Therefore, while the scores for SPARK sample appear rather low, the SPARK sample is reporting more difficulty with emotional regulation than the normative groups

Group Differences in Pre-Intervention Scores. For the pre-intervention scores on the DERS-SF scales, the NO SPARK group had significantly lower mean scores on the Impulse subscale than the SPARK group. And, although the mean score for the NO SPARK group on the Clarity subscale was lower than that for the SPARK group, this difference was not close to significant, so the scores were essentially similar. The difference for the total score was in the same direction and approached but did not attain significance.

Group Differences in Post-Intervention Scores. For both the Impulse and Clarity subscales of the DERS-SF, the mean post-intervention scores for the NO SPARK group were markedly higher than the pre-intervention scores; whereas for the SPARK group the mean scores went

down for both subscales. So, the change from pre- to post- after controlling for pre-intervention levels was significant for both subscales. Lower scores reflect less difficulty with emotional regulation, so the SPARK group appeared to improve in this regard whereas the NO SPARK had some deterioration in their emotional regulation ability. While the Clarity subscale difference obtained a Hedges' g value of 0.31 (a smallish effect size), both the DERS-SF Total and the Impulse subscale obtained Hedges' g values that were approached the medium effect size range (0.48 and 0.54, respectively).

Table 9. Difficulties in Emotion Regulation (DERS-SF) Scores for Students in the SPARK vs. Students in the NO SPARK condition – pre-intervention, post-intervention, and change					
	SPARK	NO SPARK	Difference	F	p
Total DERS-SF Score					
Pre-Intervention	9.83	8.43	-1.40	3.15	.0776
Post-Intervention	8.57	10.25	1.68	12.31	.0006
Change (post – pre)	-1.26	1.81	3.07	--	--
Clarity Subscale					
Pre-Intervention	4.72	4.33	-0.39	0.70	.4047
Post-Intervention	4.44	5.21	0.77	5.13	.0246
Change (post – pre)	-0.29	0.88	1.17	--	--
Impulse Subscale					
Pre-Intervention	5.11	4.10	-1.01	4.34	.0385
Post-Intervention	4.13	5.04	0.91	15.36	<.0001
Change (post – pre)	-0.97	0.94	1.91	--	--

Resilience

Scales from the *Resiliency Scales for Children and Adolescents (RASE)* created by Sandra Prince-Embury in 2007 and published by Pearson were used in the current investigation. These include the Sense of Relatedness (REL) subscale (items 1 - 24 on the questionnaire), the Sense of Mastery (MAS) subscale (items 45 - 64), and the Optimism subscale (which uses 7 items from the MAS subscale). For each subscale, the item scores are added together, and higher scores are considered more desirable. For the REL subscale, scores can range from 0 - 96, for the MAS the range is from 0 - 80, and for the Optimism subscale the range is 0 - 28.

The 24 items in the Sense of Relatedness subscale and the 20 items in the Sense of Mastery subscale are from the Resiliency Scales for Children and Adolescents.

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Overall Level of Pre-intervention Scores. The manual for the *Resiliency Scales for Children and Adolescents (RASE)* includes conversion tables that provide standardized scores for various raw total scores for three different age ranges. To estimate the level of performance of our sample, the youth were separated into age groups corresponding to the age ranges for the conversion tables (9 - 11 years, 12 - 14 years, and 15 - 18 years). [Note there were 2 students age 8 included in the 9 - 11 group as well as 11 19 year olds and 1 20 year old included in the oldest group]. The average score was computed for each subscale for each age group. Then, the corresponding T score for each mean is presented in square brackets below the mean. These data are presented in Table 10.

Table 10. Mean Scores [and Corresponding T scores] on subscales of <i>Resiliency Scales for Children and Adolescents</i> by Age Group - Pre-Intervention			
Subscale	Age Group		
	9 -11	12-14	15-18
Sense of Relatedness	63.6 [43]	61.4 [40]	63.0 [43]
Sense of Mastery	48.0 [42]	48.8 [43]	51.1 [45]
Optimism	16.3 [43]	16.7 [43]	16.6 [46]

In all cases, the average raw scores for the age groups correspond to T scores that are below the mean (50) for the normative samples. In most cases, these scores are more than half a standard deviation below the mean, suggesting this sample is, on average, lower on resilience than the normative groups and indicating an opportunity for the intervention to impact these scores.

Table 11. *Resiliency Scales for Children and Adolescents (RASE)* Scores for Students in the SPARK vs. Students in the NO SPARK Condition – pre-intervention, post-intervention, and change

	SPARK	NO SPARK	Difference	F	p
Total Resilience Score					
Pre-Intervention	110.28	115.70	5.42	2.56	.1110
Post-Intervention	114.72	110.61	-4.11	9.56	.0023
Change (post - pre)	4.44	-5.09	-9.53	--	--
Relatedness Subscale					
Pre-Intervention	61.47	63.94	2.47	1.60	.2077
Post-Intervention	63.04	60.69	-2.35	6.71	.0103
Change (post - pre)	1.57	-3.25	-4.82	--	--
Mastery Subscale					
Pre-Intervention	48.80	51.76	2.96	2.75	.0987
Post-Intervention	51.69	49.92	-1.77	6.99	.0088
Change (post - pre)	2.88	-1.85	-4.73	--	--
Optimism Subscale					
Pre-Intervention	16.24	17.09	0.85	1.52	.2197
Post-Intervention	17.12	16.73	-0.39	2.99	.0851
Change (post - pre)	0.88	-0.36	-1.24	--	--

Group Differences in Pre-Intervention Scores. For the pre-intervention scores on the RASE scales, the NO SPARK group had higher mean scores on Total Resilience and on each of the subscales, but none of the differences attained significance.

Group Differences in Post-Intervention Scores. For both the Total Resilience scale and each of the subscales, the mean post-intervention scores for the NO SPARK group were somewhat lower than the pre-intervention scores; whereas for the SPARK group the mean scores went up for all the scales. The change from pre- to post- after controlling for pre-intervention levels was significant for the Total Resilience scale and for both the Mastery and Relatedness subscales. Higher scores reflect more resilience, so the SPARK group appeared to improve in this regard whereas the NO SPARK had some deterioration in their resilience. The scores on the Optimism subscale evidenced the same of differences, but for that subscale the difference did not attain significance. While the Optimism subscale difference obtained a Hedges' g value of 0.23 (a small effect size), both the Mastery and Relatedness subscale effects were higher (0.37 and 0.36, respectively). The Total Resilience score difference was closer to a medium sized effect (Hedges' g = 0.43).

The manual for the *Resiliency Scales for Children and Adolescents* provides tables to convert raw scores to standardized scores for three different age groups. The SPARK sample was divided according to the age grouping for these conversions (9 - 11, 12 -14, and 15 - 18 years). Students under 9 were included with the youngest age group, and students over 18 were included with the oldest age group. The average score was computed for each subscale for each age group by condition for pre-test and post-test. The standardized score corresponding to each mean was determined. These are presented in Table 12 below.

It can be seen in Table 12 that for the two younger groups of students, the scores for the students in the SPARK condition actually went down from pre-test to post-test for all measures except for the Mastery subscales for the 12 - 14-year-old group. In contrast, the oldest students in the SPARK condition improved from pre-test to post-test for all three subscales (while the NO SPARK students in that group went down).

In order to determine if this age effect occurred with the other measures, the ANCOVAs reported above were repeated for the 3P Inventory score, the Understanding Principles score, the CDP Total score, the DERS Total score, and the RASE Total Resilience scores. For each of these measures, the ANCOVA was done separately for students under 15 years of age and for students 15 years or older. For the analyses with the younger students, none of the analyses obtained a significant difference between the SPARK and NO SPARK conditions on the post-test measure while covarying out the effect of the pre-test measure. Although, the effects for the 3P Inventory and for the DERS Total approached significance ($p = .062$ and $p = .102$, respectively). For the older students, analysis for Understanding Principles showed no group differences. However, the tests for the other four measures were all clearly significant. The F values ranged from 7.29 to 28.43 and the p values were all less than .008. Table 13 shows the results for the students 15 years of age or older.

Table 12. Mean scores [and corresponding T-scores] on subscales of *Resiliency Scales for Children and Adolescents* by age group, condition, and time*

Subscales	Age Group											
	9-11				12-14				15-18			
	SPARK (N=6)		NO SPARK (N=15)		SPARK (N=39)		NO SPARK (N=18)		SPARK (N=67)		NO SPARK (N=64)	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Relatedness	57.8 [38]	52.7 [34]	65.9 [44]	63.4 [42]	60.5 [39]	58.7 [38]	63.3 [41]	64.0 [42]	62.4 [43]	66.5 [45]	63.6 [44]	59.1 [41]
Mastery	48.7 [43]	45.3 [39]	47.8 [42]	47.0 [41]	46.3 [40]	48.8 [43]	54.3 [47]	51.4 [44]	50.3 [44]	53.9 [47]	52.0 [46]	50.2 [44]
Optimism	16.3 [8]	14.7 [7]	16.3 [8]	15.7 [8]	15.9 [8]	15.6 [8]	18.5 [10]	17.8 [9]	16.4 [8]	18.2 [9]	16.9 [9]	16.7 [9]

*NOTE 1: Within each cell of the table the mean is in the first row, then the corresponding T score from the tables in the RASE manual in the second row. T scores have a mean of 50 and standard deviation of 10 in the normative population. T scores are not provided in the manual for the Optimism subscale; however, scaled scores are provided instead.

This pattern of results may suggest that the SPARK intervention works better for older students; however, it should be pointed out that in this study age is confounded with classroom and school. Therefore, this conclusion would have to be considered very tentative.

The impact of the SPRK curriculum in students 15-years of age and older is illustrated in Table 14. This table reveals that

- 72% of the students 15-years-old or older showed positive change on their knowledge of the SPARK curriculum while only 33% of the students without exposure to SPARK showed positive change,
- 67% of the students 15-years-old or older showed positive change on their communication, decision making and problem-solving skills while only 34% of the students without exposure to SPARK showed positive change,
- 64% of the students 15-years-old or older showed less difficulty in regulating their emotions while only 25% of the students without exposure to SPARK had less difficulty in this area, and
- 66% of the students 15-years-old or older showed positive change on their levels of resiliency while only 36% of the students without exposure to SPARK showed positive change in this area.

Table 13. Change in the Total Scores for 4 Scales for students in the SPARK condition vs. students in the NO SPARK condition – pre-intervention, post-intervention, and change. Limited to students with age ≥ 15 .

	SPARK	NO SPARK	F	p	Hedges g
Knowledge of 3P Inventory					
Pre-Intervention	33.70	34.63			
Post-Intervention	39.33	34.23			
Change (post – pre)	5.63	-0.39	29.64	<.0001	0.946
% Change (post – pre)	+16.7%	-1.1%			
Total CDP Score					
Pre-Intervention	54.70	56.72			
Post-Intervention	59.30	56.16			
Change (post – pre)	4.60	-0.56	8.77	.0036	0.515
% Change (post – pre)	+8.4%	-1.0%			
Total DERS-SF Score					
Pre-Intervention	9.48	7.34			
Post-Intervention	7.96	9.78			
Change (post – pre)	-1.52	2.44	10.36	.0016	0.559
% Change (post – pre)	-16.0%	+33.2%			
Total Resilience Score					
Pre-Intervention	112.66	115.63			
Post-Intervention	120.39	109.31			
Change (post – pre)	7.73	-6.31	16.79	<.0001	0.712
% Change (post – pre)	+6.9%	-5.5%			

Table 14. Percent of students in each group with changes in scores greater than the group mean change score, positive change and negative change in scores overtime in four areas.		
	SPARK	NO SPARK
Total number of students age >= 15	67	64
Knowledge of 3P Inventory		
Number of students with > group mean Change score	28 (42%)	35 (55%)
Number of students with + change score	48 (72%)	21 (33%)
Number of students with – change score	15 (22%)	29 (45%)
Total CDP Score		
Number of students with > group mean Change score	35 (52%)	35 (55%)
Number of students with + change score	45 (67%)	22 (34%)
Number of students with – change score	18 (27%)	29 (45%)
Total DERS-SF Score**		
Number of students with < group mean Change score	36 (54%)	38 (59%)
Number of students with + change score	19 (28%)	35 (55%)
Number of students with – change score	43 (64%)	16 (25%)
Total Resilience Score		
Number of students with > group mean Change score	34 (51%)	30 (47%)
Number of students with + change score	44 (66%)	23 (36%)
Number of students with – change score	23 (34%)	38 (59%)
** note: For this scale negative change reflects improvement on this scale.		

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Appendix A

SPARK Curricula Logic Model

GOAL:

The SPARK Curricula reduce risk factors and builds resiliency to promote emotional well-being and school success in middle and high school students

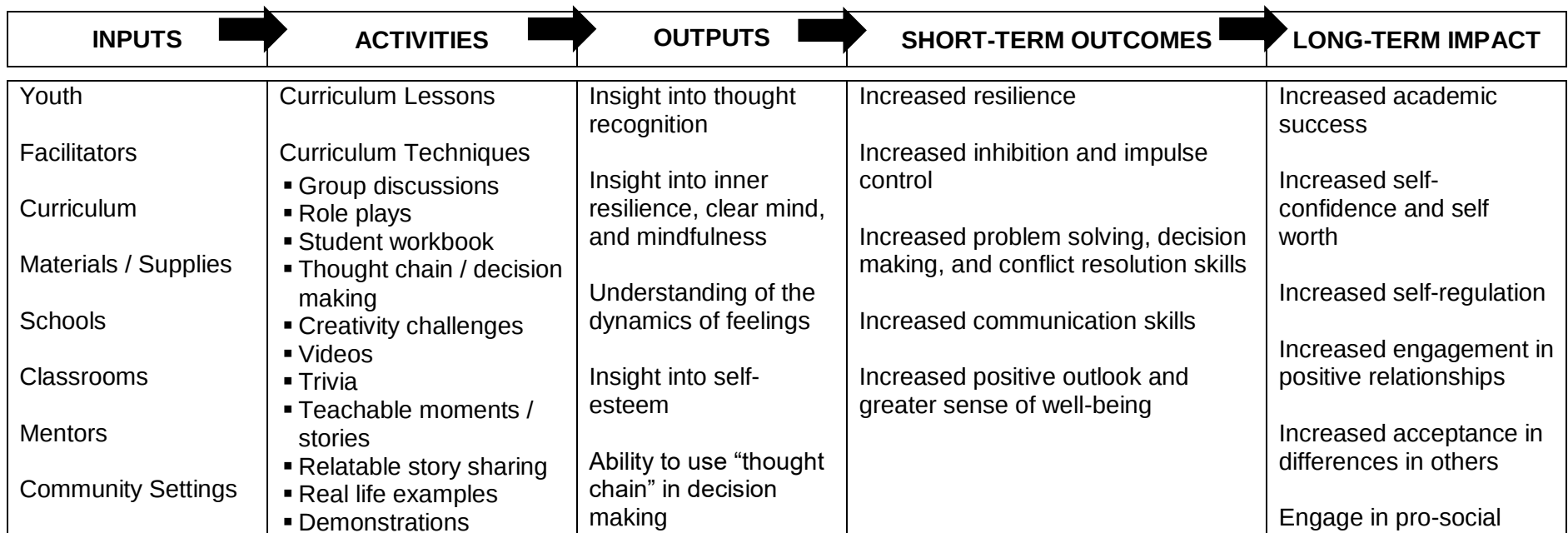
OBJECTIVES:

Teach youth an understanding of the mind in order to reduce risky behavior and enhance resiliency (Lessons)
 Connect skills learned to life experiences and circumstances (Generalization)
 Build a relationship and connectedness that supports participants and the skills learned (Mentoring)
 Empower participants to utilize their leadership and creativity in giving back to their community (Community Involvement)

CHALLENGES:

Many youth come to school with an array of the following risk factors: aggressive behavior, reactive behaviors, impulsive behavior, poor academic success, lack of school commitment, depression and anxiety, low confidence/self-esteem, low social skills, disrespect towards authority

Many schools do not have the resources to implement social emotional learning programs and curricula in social and communication skills and emotional competency



	One-to-One Mentoring ▪ Rapport building ▪ Goal setting Community Involvement ▪ Community projects	Increased positive connection with others and the community		behaviors
MEASUREMENT				
Fidelity scales	Service delivery documentation	Curriculum pre- and post-surveys	Resilience Scale	Student grade report
Teacher feedback		Student feedback		School attendance reports
		Teacher input		School discipline reports

Appendix B

Session Fidelity Scale

This SPARK Curriculum Session Fidelity Scale is administered immediately following each SPARK Curriculum session by the facilitator as a self-assessment. It is submitted to The SPARK Initiative supervisor on a weekly basis. Fidelity Scale responses and results are reviewed individually with the facilitator following completion.

General Information

Facilitator:	Facilitator Code:		
Site/School:	School Code:	Classroom Code:	
Curriculum Used: ☐ Preteen or ☐ Teen	Lesson #:		
Student Population:	Number of Students:		
Assessment Date:	Assessment Time:		
Review Type: ☐ Self-Assessment			

Curriculum Administration

	Not met				Met
I review the lesson objectives	①	②	③	④	
I follow the lesson content	①	②	③	④	
I use the relevant materials with each lesson	①	②	③	④	
I conduct the activities associated with each lesson	①	②	③	④	
I spend the relevant amount of time on each activity	①	②	③	④	
I incorporate questions and answer sessions within each lesson	①	②	③	④	
I incorporate scenarios within each lesson	①	②	③	④	
I ask participants if there are any questions or concerns before ending a lesson	①	②	③	④	
I structure the lesson with a beginning, middle, and end	①	②	③	④	
I get to know each participant	①	②	③	④	
I do not speak to the participants circumstances	①	②	③	④	
My approach represents The SPARK Initiative's values	①	②	③	④	
I am knowledgeable of subject matter	①	②	③	④	
I present clearly to the audiences' understanding	①	②	③	④	

	Not met			Met
I encourage audience participation	①	②	③	④
I listen intently to participants	①	②	③	④
I answer questions appropriately	①	②	③	④
I manage group dynamics effectively	①	②	③	④
I keep presentation, activities, and discussion focused on lesson objectives	①	②	③	④
I keep the lesson within a relevant time frame	①	②	③	④
I show respect toward participants	①	②	③	④
I promote participants' potential and resiliency	①	②	③	④
I demonstrate confidence and professionalism	①	②	③	④

Curriculum Administration Comments

Curriculum Administration Recommendations

APPENDIX C

Supervisory Fidelity Scale

This SPARK Curriculum Session Supervisory Fidelity Scale is administered through two random session observations by The SPARK Initiative supervisory representative during a SPARK Curriculum session series. Fidelity Scale responses and results are reviewed individually with the facilitator following completion.

General Information

Facilitator:	Facilitator Code:		
Site/School:	School Code:	Classroom Code:	
Curriculum Used: ☐ Preteen or ☐ Teen	Lesson #:		
Student Population:	Number of Students:		
Assessment Date:	Assessment Time:		
Review Type: ☐ Observation [Observer _____]			

Curriculum Administration

	Not met				Met			
Facilitator reviews the lesson objectives	①	②	③	④	①	②	③	④
Facilitator follows the lesson content	①	②	③	④	①	②	③	④
Facilitator uses the relevant materials with each lesson	①	②	③	④	①	②	③	④
Facilitators conducts the activities associated with each lesson	①	②	③	④	①	②	③	④
Facilitator spends the relevant amount of time on each activity	①	②	③	④	①	②	③	④
Facilitator incorporates questions and answer sessions within each lesson	①	②	③	④	①	②	③	④
Facilitator incorporates scenarios within each lesson	①	②	③	④	①	②	③	④
Facilitator asks participants if there are any questions or concerns before ending a lesson	①	②	③	④	①	②	③	④
Facilitator structures the lesson with a beginning, middle, and end	①	②	③	④	①	②	③	④
Facilitator gets to know each participant	①	②	③	④	①	②	③	④
Facilitator does not speak to the participants circumstances	①	②	③	④	①	②	③	④
Facilitator's approach represents The SPARK Initiative's values	①	②	③	④	①	②	③	④
Facilitator is knowledgeable of subject matter	①	②	③	④	①	②	③	④

	Not met			Met
Facilitator presents clearly to the audiences' understanding	①	②	③	④
Facilitator encourages audience participation	①	②	③	④
Facilitator listens intently to participants	①	②	③	④
Facilitator answers questions appropriately	①	②	③	④
Facilitator manages group dynamics effectively	①	②	③	④
Facilitator keeps presentation, activities, and discussion focused on lesson objectives	①	②	③	④
Facilitator keeps the lesson within relevant time frame	①	②	③	④
Facilitator shows respect toward participants	①	②	③	④
Facilitator promotes participants' potential and resiliency	①	②	③	④
Facilitator demonstrates confidence and professionalism	①	②	③	④

Curriculum Administration Comments

Curriculum Administration Recommendations

APPENDIX D

Annual Program Fidelity Scale

This SPARK Curriculum Annual Program Fidelity Scale is administered annually by the facilitator as a self-assessment upon completion of a full SPARK Curriculum session series and by The SPARK Initiative representative as an observation of the facilitator's administration of a full SPARK Curriculum session series. Fidelity Scale responses and results are reviewed individually with the facilitator following completion.

General Information

Facilitator:	Facilitator Code:		
Site/School:	School Code:	Classroom Code:	
Curriculum Used: ☐ Preteen or ☐ Teen	Lesson #s:		
Student Population:	Number of Students:		
Assessment Date:	Assessment Time:		
Review Type: ☐ Self-Assessment or ☐ Observation [Observer _____]			

Curriculum Training and Preparation

Enter Training dates where requested	Not met		Met	
Facilitator was trained on S.P.A.R.K Curriculum TRAINING DATE:	①	②	③	④
Facilitator studied the three principles behind the SPARK Curriculum: Mind, Thought, and Consciousness DATE(s):	①	②	③	④
Facilitator was trained on administering the SPARK Curriculum TRAINING DATE:	①	②	③	④
Facilitator co-administered SPARK Curriculum with experienced facilitator prior to conducting lessons DATE(s):	①	②	③	④

Comments

Curriculum Administration

	Not met			Met
Facilitator spends time completing pre-lesson preparation work	①	②	③	④
Facilitator teaches the core lessons in sequence	①	②	③	④
Facilitator teaches the additional lessons based on audience need	①	②	③	④
Facilitator teaches the last two required lessons	①	②	③	④
Facilitator conducts lessons once a week or every other week	①	②	③	④
Facilitator incorporates mentoring within program delivery	①	②	③	④
Facilitator incorporates teacher and school involvement with program delivery	①	②	③	④
Facilitator incorporates parent and family involvement with program delivery	①	②	③	④
Facilitator incorporates community involvement within program delivery	①	②	③	④
Facilitator completes required program paperwork accurately	①	②	③	④

Comments

APPENDIX E

Sample Fidelity Rating Chart

Class: 6 / Mentor: 1

Classroom: 13

	1	2	3	4	5	6	7	8	9	10*	11	12	13	AVG	Observer*
	25-Jan	1-Feb	8-Feb	15-Feb	22-Feb	1-Mar	8-Mar	22-Mar	29-Mar	5-Apr	12-Apr	19-Apr	26-Apr	AVG	Rating
1. Objectives	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2. Content	4	4	4	4	4	4	4	4	4	4	3	3	4	3.85	4
3. Materials	4	4	4	4	3	4	4	4	4	4	4	4	4	3.92	4
4. Activities	3	4	4	4	4	4	4	4	4	4	4	4	4	3.92	4
5. Time	4	4	4	3	4	4	4	4	4	3	4	4	4	3.85	3
6. Ask Questions	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2
7. Scenarios	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
8. Questions	4	4	4	4	4	4	4	4	4	4	3	4	4	3.92	2
9. Structure	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
10. Know	3	4	4	4	4	4	4	4	4	4	4	4	4	3.92	4
11. Circumstance	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
12. Value	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
13. Knowledge	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
14. Clearly	4	4	4	4	4	4	4	4	4	3	4	4	4	3.92	4
15. Encourage	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
16. Listen	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
17. Questions	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2
18. Dynamics	4	4	4	4	4	3	4	4	4	4	4	4	4	3.92	3
19. Focused	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
20. Time	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
21. Respect	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
22. Potential	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
23. Confidence	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
SUM:	90	92	92	91	91	91	92	92	92	90	90	91	92	91.23	84
% of perfect (92)	97.83%	100.00%	100.00%	98.91%	98.91%	98.91%	100.00%	100.00%	100.00%	97.83%	97.83%	98.91%	100.00%	99.16%	91.30%

APPENDIX F

Sample Attendance Record

School: 6
Mentor: 1
Classroom: 13

Student	1	2	3	4	5	6	7	8	9	10	11	12	13	# of Classes	Percent
Number	25-Jan	1-Feb	8-Feb	15-Feb	22-Feb	1-Mar	8-Mar	22-Mar	29-Mar	5-Apr	12-Apr	19-Apr	26-Apr	Attended	Attendance
615	1	1	1	1	1	1	1	1	1	0	1	1	1	12	92.31%
626	1	1	0	0	0	0	0	0	1	0	0	0	0	Withdrawn	Withdrawn
289	0	0	1	1	1	1	1	1	1	1	1	1	1	11	84.62%
345	1	1	1	0	0	1	1	1	1	1	1	1	1	11	84.62%
284	1	1	1	1	1	1	1	1	1	0	1	1	1	12	92.31%
4132487	1	1	1	1	1	1	1	1	1	0	1	1	1	12	92.31%
3303261	1	0	1	1	1	1	0	1	1	1	1	1	1	11	84.62%
7801745	1	1	0	1	1	1	0	1	0	0	1	0	0	Withdrawn	Withdrawn
2916907	1	1	1	1	1	1	1	1	1	1	1	1	1	13	100%
1862508	1	1	1	0	1	1	1	1	1	1	1	1	1	12	92.31%
3688349	1	1	1	1	1	1	1	1	1	1	1	0	1	12	92.31%
3185239	1	0	1	0	1	1	1	1	1	1	1	1	1	11	84.62%
2927078	1	1	0	1	0	1	1	1	1	1	1	1	1	11	84.62%
3320802	1	1	0	1	1	1	1	1	1	1	1	0	1	11	84.62%
2959550	1	1	1	1	1	1	1	1	1	1	1	1	1	13	100%
2869536	1	1	1	1	1	1	1	1	1	1	1	1	1	13	100%
2635838	1	1	1	1	1	1	1	1	1	0	1	0	1	11	84.62%
3052249	1	1	1	1	1	1	0	1	1	1	1	0	1	11	84.62%
3728202	1	1	1	1	1	1	1	1	1	1	1	1	1	13	100%
6469580	1	1	1	1	1	1	1	1	1	1	1	1	1	13	100%
5220612	1	1	1	1	0	1	0	1	1	1	1	1	1	11	84.62%
6057567	1	1	1	0	1	1	0	1	0	1	1	0	0	Withdrawn	Withdrawn
Total:	19	17	16	16	17	19	16	21	19	14	21	14	19		

APPENDIX G



STUDENT QUESTIONNAIRE

Student Name: _____ Student Number: _____

We would like to know more about you. Please answer the questions below to the best of your ability.

Your answers will only be shared with the staff of The SPARK Initiative.

Please place an X on the number to indicate your answer.

Example

	Questions	Never	Rarely	Sometimes	Often	Almost always
Ex	I learn new games easily	①	②	③	④	⑤
Ex	I eat lots of candy	①	②	③	④	⑤

Below is a list of things that happen to people and that people think, feel, or do. Read each sentence carefully and mark the one answer that tells about you best.		Never	Rarely	Some times	Often	Almost always
1	I can meet new people easily.	①	②	③	④	⑤
2	I can	①	②	③	④	⑤
3	Peopl	①	②	③	④	⑤
4	I feel	①	②	③	④	⑤
5	I have	①	②	③	④	⑤
6	I like	①	②	③	④	⑤
7	I sper	①	②	③	④	⑤
8	Other	①	②	③	④	⑤
9	I can	①	②	③	④	⑤
10	I can	①	②	③	④	⑤
11	I can	①	②	③	④	⑤
12	I can	①	②	③	④	⑤
13	I can	①	②	③	④	⑤
14	If peo	①	②	③	④	⑤
15	I can	①	②	③	④	⑤
16	I can thing.	①	②	③	④	⑤
17	I can that h	①	②	③	④	⑤
18	If som help.	①	②	③	④	⑤
19	If som help.	①	②	③	④	⑤
20	There happe	①	②	③	④	⑤
21	If I ge	①	②	③	④	⑤
22	There	①	②	③	④	⑤
23	Peopl	①	②	③	④	⑤
24	People accept me for who I really am.	①	②	③	④	⑤

For office use only 1-8-18

Sch: _____ Classroom _____ facil (88= not applicable) _____ date collected: _____

<i>Please mark the number that describes your view of each of the following:</i>		Disagree Completely No exceptions	Disagree Strongly	Disagree Somewhat	Agree Somewhat	Agree Strongly	Agree Completely No Exceptions
25	No matter what my circumstances, wisdom is always available to me.	①	②	③	④	⑤	⑥
26	The only feelings I can have are created by my thinking.	①	②	③	④	⑤	⑥
27	Sometimes people's moods have nothing to do with their thinking.	①	②	③	④	⑤	⑥
28	If something traumatic happens to me it can damage my mental health.	①	②	③	④	⑤	⑥
29	My self-esteem can be affected as a result of people criticizing me or "putting me down."	①	②	③	④	⑤	⑥
30	The only way people can experience stress is as a result of their thinking.	①	②	③	④	⑤	⑥
31	I am always doing the best I can.	①	②	③	④	⑤	⑥
32	When I'm stressed, my stress is caused by the situation I am in.	①	②	③	④	⑤	⑥
33	People's feelings are determined by factors such as their situations, circumstances and how other people treat them.	①	②	③	④	⑤	⑥
34	Every experience I have is created from my thinking.	①	②	③	④	⑤	⑥

<i>Please mark the number that typically describes your experience of each of the following:</i>		Almost Never	Sometimes Rarely	About half the time	Most of the time	Almost always
35	When I'm upset, I become out of control.	①	②	③	④	⑤
36	When I'm upset, I lose control over my behavior.	①	②	③	④	⑤
37	When I'm upset, I have difficulty controlling my behavior.	①	②	③	④	⑤
38	I am confused about how I feel.	①	②	③	④	⑤
39	I have difficulty making sense out of my feelings.	①	②	③	④	⑤
40	I have no idea how I am feeling.	①	②	③	④	⑤

<i>Please mark the answer that best describes you.</i>		Strongly Disagree	Mostly Disagree	Neither agree or disagree	Mostly Agree	Strongly Agree
41	My feelings come from my thoughts, not outside circumstances.	①	②	③	④	⑤
42	If I make a mistake, I spend a lot of time thinking about it.	①	②	③	④	⑤
43	When I have a problem, I tend to spend a lot of time worrying about it.	①	②	③	④	⑤
44	Circumstances in my life directly impact my ability to achieve my goals.	①	②	③	④	⑤

Below is a list of things that happen to people and that people think, feel, or do. Read each sentence carefully and mark the one answer that tells about you best.		Never	Rarely	Some times	Often	Almost always
45	Life is fair.	①	①	②	③	④
46	I can solve problems.	①	①	②	③	④
47	I can solve problems.	①	①	②	③	④
48	I can solve problems.	①	①	②	③	④
49	I do what I can.	①	①	②	③	④
50	I am confident.	①	①	②	③	④
51	I am confident.	①	①	②	③	④
52	I make decisions.	①	①	②	③	④
53	I can solve problems.	①	①	②	③	④
54	I can solve problems.	①	①	②	③	④
55	If I have a problem.	①	①	②	③	④
56	If I have a problem.	①	①	②	③	④
57	If I have a problem.	①	①	②	③	④
58	I can solve problems.	①	①	②	③	④
59	I can solve problems.	①	①	②	③	④
60	I can solve problems.	①	①	②	③	④
61	I can solve problems.	①	①	②	③	④
62	Good things happen to me.	①	①	②	③	④
63	My life is good.	①	①	②	③	④
64	No matter what happens, things will be all right.	①	①	②	③	④

20 items from the Sense of Mastery subscale from the Resiliency Scales for Children and Adolescents. Copyright held by Pearson Publishing. www.pearsonclinical.com 1-800-211-8378 Prince-Embury, S (2007). Resiliency scales for children and Adolescents: A profile of personal strengths. San Antonio, TX, Pearson.

Read each sentence below carefully and mark the one answer that best describes you.		Never	Rarely	Some times	Often	Almost always
65	I look within myself to solve problems successfully.	①	②	③	④	⑤
66	I am confident in my ability to solve problem successfully.	①	②	③	④	⑤
67	I keep an open mind about what caused a problem.	①	②	③	④	⑤
68	I look at the likely results for each possible solution.	①	②	③	④	⑤
69	If my solution is not working, I will try another solution.	①	②	③	④	⑤
70	I know how to make decisions that are the best for me.	①	②	③	④	⑤
71	I know how to make decisions based on what is best for my future.	①	②	③	④	⑤
72	I consider consequences prior to making decisions.	①	②	③	④	⑤
73	I act on my feeling when faced with making decisions.	①	②	③	④	⑤
74	I am confident in using my thought chain skills when making decisions.	①	②	③	④	⑤
75	I recognize when two people are trying to say the same thing, but in different ways.	①	②	③	④	⑤
76	In conversations with others, I able to communicate my side as well as hear another people's side as well.	①	②	③	④	⑤
77	I try to see the other person's point of view.	①	②	③	④	⑤
78	I can communicate my feelings without blaming others.	①	②	③	④	⑤
79	I clear my mind before I start a conversation.	①	②	③	④	⑤
80	I keep in mind what I want from a conversation before I start talking to others.	①	②	③	④	⑤

APPENDIX H

CODE BOOK for student protocol January 2018

Update 5/07/18

Purpose is to give each variable a name for the data set, define each variable and its source, and to describe any scoring and scales that might be helpful to any future data analyses.

Guidance for data entry: (1) Enter the value exactly as written by student on protocol into the data base. (2) If item is blank on protocol, enter 99 in the data base.

Variable Name	Define Variable/ code	Code	Source and Scoring	
Student#	7 digits in length 3-digit code= students attending Livingstone Academy	Numerical number	The student# is assigned by the school system. We have asked for student# on the Parent Consent Form and on the Student Protocol. Student numbers for Livingstone Seffner developed by researchers and is a three-digit number that leads with a 1. Livingstone Riverview is also a three-digit number and leads with a 2.	
School	School attended by student	1 = Livingstone/ Seffner – Middle 2 = Livingstone/ Riverview– Middle 3 = South County Career Center 4 = Lennard HS 5 = Blake HS 6 = Simmons Career Center		
Condition	Which condition is the student in?	1= Intervention / Spark 2= Comparison / No Spark	Intervention or Comparison Group	Randomly assigned (RA) or chosen at staff discretion (Not RA)
Classroom	Classroom description	1=Livingstone/Seffner– K. F. 2=Livingstone/Seffner- A. C. 3=Livingstone/Riverview- J. P. 4=Livingstone/Riverview– K. R. 5= South County- B. H.- Class period 7 6= South County– R. K.- Class period 3 7=Lennard- V. A- Class period 7 8=Lennard- V. A.- Class period 6 9=Blake- P. W.- Class period 3 10=Blake- P. W Class period 1 11=Blake- G. W- Class period 4 12=Blake- G. W Class period 5 13=Simmons- A. L.- Class period 2 14=Simmons- G. H.- Class period 2 15=Simmons- A. L.- Class period 3 16=Simmons- G. H.- Class period 3 17=Simmons- A. H. Class period 4	Intervention Comparison Intervention Comparison Intervention Comparison Intervention Comparison Intervention Comparison Intervention Comparison Intervention Comparison Intervention	RA RA RA RA RA RA Not RA Not RA RA RA RA RA Not RA

Mentor	Person assigned to deliver Spark Curriculum	88 = control, no mentor 1 = Ashley 4 = Jena 2 = Helen 3 = Nicole 5 = Brooke	
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Variable Name	Define Variable/ code	Code	Source and Scoring
YrBirth	Year of student birth	Four digits example 1997, 2004	Asked for DOB on Parent Consent Form
MonBirth	Month of student birth	Two digits examples 06, 07 10	Asked for DOB on Parent Consent Form
Daybirth	Day of student birth	Two digits example 01, 04, 25, 30	Asked for DOB on Parent Consent Form
Gender	Gender of student	1 = female 2 = male 3 = other	Asked for Gender on Parent Consent Form
Hispanic	Hispanic or Latino	1= yes 2= no	Consent form
Race	Ethnicity of student	1 = Black 2 = White 4 = Amer Ind/ Alaskan 5 = Asian/ Pacific Islander 6= two more races 9 = blank	Asked for Ethnicity of student on Parent Consent form.
SES	Lunch status of student. Provide proxy for socio-economic status (SES) of student.	88 = not applicable, students attend Livingstone Academy 1 = yes, gets free or reduced lunch 2 = pays full price for lunch	Obtain from school office staff
REL2 pre	Item 2 on protocol	0 = never 1 = Rarely 2 = Sometimes 3 = Often 4 = Almost always	Items 1 to 24 on the protocol come from the <i>Resiliency Scales for Children and Adolescents (RASE)</i> , the Sense of Relatedness (REL) subscale. To score, add all 24 items together. Higher score more desirable. Range of score is from 0 to 96.
REL3 pre	Item 3 “		
REL4 pre	Item 4 “		
REL5 pre	Item 5 “		
REL6 pre	Item 6 “		
REL7 pre	Item 7 “		
REL8 pre	Item 8 “		
REL9 pre	Item 9 “		
REL10 pre	Item 10 “		
REL11pre	Item 11 “		
REL12pre	Item 12 “		
REL13pre	Item 13 “		
REL14 pre	Item 14 “		
REL15pre	Item 15 “		
REL16pre	Item 16 “		
REL17pre	Item 17 “		

Variable Name	Define Variable/ code	Code	Source and Scoring
REL18pre	Item 18 “		
REL19pre	Item 19 “		
REL20pre	Item 20 “		
REL21pre	Item 21 “		
REL22pre	Item 22 “		
REL23pre	Item 23 “		
REL24pre	Item 24 “		
3P1pre	Item 25 on protocol	1 = Disagree Completely 2 = Disagree Strongly 3 = Disagree Somewhat 4 = Agree Somewhat 5 = Agree Strongly 6 = Agree Completely no exceptions	Items 25 to 34 (10 items) are from the 3P (Three Principles) Inventory. *** Five Items 27, 28, 29, 32 and 33 are reversed scored. (3P3, 3P4, 3P5, 3P9). Higher scores more desirable, Range is from 10 to 60.
3P2pre	Item 26 on protocol		
3P3pre	Item 27 on protocol		
3P4pre	Item 28 on protocol		
3P5pre	Item 29 on protocol		
3P6pre	Item 30 on protocol		
3P7pre	Item 31 on protocol		
3P8pre	Item 32 on protocol		
3P9pre	Item 33 on protocol		
3P10pre	Item 34 on protocol		
DERS1pre	Item 35 on protocol	0 = almost never 1 = sometimes rarely 2 = about half the time 3 = Most of the time 4 = almost always	Items 35 to 40 on the protocol are from the <i>Difficulties in Emotional Regulation Scale</i> (DERS). To score, add items together. DERS1, DERS2 and DERS3 (or Items 35, 36, 37 on the protocol) are added together to obtain an <i>Impulse</i> Score. Range 0 to 12. With LOWER scores more desirable. DERS4, DERS5 and DERS6 (or Items 38, 39, 40 on the protocol) are added together to obtain the <i>Clarity</i> Score. Range 0 to 12. With LOWER scores more desirable.
DERS2pre	Item 36 on protocol		
DERS3pre	Item 37 on protocol		
DERS4pre	Item 38 on protocol		
DERS5pre	Item 39 on protocol		
DERS6pre	Item 40 on protocol		
UP1pre	Item 41 on protocol	1= strongly disagree 2 = mostly disagree 3 = neither agree or disagree 4 = mostly agree 5 = strongly agree	Items 41 to 44 on the protocol are the <i>Understanding Principles</i> items by Brooke, CEO of program. *** Items 42, 43, and 44 are reverse scored.
UP2pre	Item 42 on protocol		
UP3pre	Item 43 on protocol		
UP4pre	Item 44 on protocol		

Variable Name	Define Variable/ code	Code	Source and Scoring
			To score, add items together. Range 5 to 20. Higher scores more desirable
MAS1pre	Item 45 on protocol	0 = never 1 = Rarely 2 = Sometimes 3 = Often 4 = Almost always	Items 45- 64 (20 items) on the protocol come from the <i>Resiliency Scales for Children and Adolescents (RASE)</i>, the Sense of Mastery (MAS) subscale. To score, add all 20 items together for <i>Total Mastery Scale</i>. Range 0 to 80. Higher scores more desirable. 7 items make up the <i>OPTISIM</i> subscale and should be scored separately. These items are 45, 46,47,48, 62, 63 and 64 or MAS1Pre, MAS2Pre, MAS3Pre, MAS4Pre, MAS18PRE, MAS19Pre, and MAS20pre. <i>Total Resilience Score</i> = adding REL and MAS together Range of score is from 0 to 96.
MAS2pre	Item 46 on protocol		
MAS3pre	Item 47 on protocol		
MAS4pre	Item 48 on protocol		
MAS5pre	Item 49 on protocol		
MAS6pre	Item 50 on protocol		
MAS7pre	Item 51 on protocol		
MAS8pre	Item 52 on protocol		
MAS9pre	Item 53 on protocol		
MAS10pre	Item 54 on protocol		
MAS11pre	Item 55 on protocol		
MAS12pre	Item 56 on protocol		
MAS13pre	Item 57 on protocol		
MAS14pre	Item 58 on protocol		
MAS15pre	Item 59 on protocol		
MAS16pre	Item 60 on protocol		
MAS17pre	Item 61 on protocol		
MAS18pre	Item 62 on protocol		
MAS19pre	Item 63 on protocol		
MAS20pre	Item 64 on protocol		
CDP1pre	Item 65on protocol	1 = Never 2 = Rarely 3 = Sometimes 4 = Often 5 = almost always	The Communication, Decision Making and Problem Solving (CDP) scale has 16 items and was developed by SPARK program Staff. Scores range from 16 to 90 with higher scores more desirable.
CDP2pre	Item 66 on protocol		
CDP3pre	Item 67 “		
CDP4pre	Item 68 “		
CDP5pre	Item 69 “		
CDP6pre	Item 70 “		

Variable Name	Define Variable/ code	Code	Source and Scoring
CDP7pre	Item 71 “		The first 5 items represent Problem Solving skills (65,66,67,68, and 69) or CDP1Pre, CDP2Pre, CDP3Pre,
CDP8pre	Item 72 “		
CDP9pre	Item 73 “		
CDP10pre	Item 74 “		

CDP11pre	Item 75 “		CDP4Pre and CDP5Pre). The second set of 5 items represent Decision Making Skills, while the last six items represent communication skills.
CDP12pre	Item 76 “		
CDP13pre	Item 77 “		
CDP14pre	Item 78 “		
CDP15pre	Item 79 “		
CDP16pre	Item 80 “		