Applied Learning Student Questionnaire: *Overall Analysis*

Executive Summary

The Applied Learning Student Questionnaire (ALSQ) is designed to measure pre- and post-gains related to student problem solving and communication skills. The ALSQ is a self-report questionnaire that includes 36 items to assess students' attitudes on five survey constructs: *Intrinsic Motivation, Self-Management/Self-Regulation, Intent to Persist, Problem-Solving,* and *Implementation Activities*.[1] In May 2018, 151 students across three Innovation Fund programs completed the Applied Learning Student Questionnaire (ALSQ). The programs include Carroll County Step into STEM and Full STEAM Ahead, Gwinnett County Gear Up for Graduation, and Hall County/TCSG Career Pathways.

Key findings include:

- Overall, students showed statistically significant increases in *Intrinsic Motivation, Self-Management/Self-Regulation,* and *Intent to Persist*.
- Across all constructs, the largest effect size observed was for *Intrinsic Motivation*, which suggests that the programs were effective at enhancing student interest in learning and seeing value in the course content.
- Each of the three programs showed statistically significant increases in *Intrinsic Motivation, Self-Management/Self-Regulation,* and *Intent to Persist*.
- The "now" score for *Intrinsic Motivation* was the only construct that met the optimal average of 4.00, which means programs may need additional work in establishing an inquiry-based learning environment and increasing student exposure to and interest in STEM.
- The average program rating across all programs exceeded the optimal 4.00 average, with an average of 4.44, suggesting that students generally viewed the programs positively.
- Student ratings indicate that increasing student exposure to STEM professionals and real-world problems may enhance student interest in pursuing STEM education and careers in the future.

[1] *Intent to Persist* refers to aspirations, plans, and goals to pursue additional education and a career in STEM (Science, Technology, Engineering, and Math). *Implementation Activities* refer to hands-on activities designed to increase exposure to STEM topics and real-world application.

2018 Overall Results

Participants and Methods

In May 2018, 151 students across three Innovation Fund programs completed the Applied Learning Student Questionnaire (ALSQ). The response rates displayed in Table 1 suggest that 89% of the total number of participating students responded to the survey. The response rates per program ranged from 81% (Carroll County) to 97% (Gwinnett County). Although there is no agreed-upon standard for a minimum response rate, Martella, Nelson, Morgan, and Marchand-Martella (2013) suggest that a response rate of 50% is *adequate* for analysis and reporting, 60% is *good*, and 75% or higher is considered *very good*.[2] Overall, the response rate achieved across the Innovation Fund programs is considered *very good* for reporting and analysis.

Table 1. Survey Response Rates

Program	# of Survey Respondents	Total # of Participating Students[1]	Survey Response Rate
Carroll County Step into STEM & Full STEAM Ahead	66	81	81%
Gwinnett County Gear Up for Graduation	77	79	97%
Hall County/TCSG Career Pathways	8	9	89%
Total	**151**	**169**	**89%**

[1]The number of participating students represent approximations and may not reflect recent changes to the participant population (e.g., dropouts).

The ALSQ is designed to measure pre- and post-gains related to student problem solving and communication skills, self-management, and engagement.[3] The ALSQ is a self-report questionnaire that includes 36 items to assess students' attitudes on the following survey constructs:

1. **Intrinsic Motivation**: motivation stemming from goals of mastery, learning, and challenge. Example, "It is important for me to learn what is being taught in this program."
2. **Self-Management/Self-Regulation**: effortful and persistent behaviors that are used to guide, monitor, and direct the success of one's learning and performance. Example, "I turn all my assignments in on time."
3. **Intent to Persist**: aspirations, plans, and goals to pursue additional education and a career in STEM. Example, "I intend to get a college degree in STEM (Science, Technology, Engineering, and Math)."
4. **Problem-Solving**: inquiry-based learning environment that provides higher-order cognitive tasks and real-world application. Example, "I work out explanations on my own."
5. **Implementation Activities**: hands-on activities designed to increase exposure to STEM topics and real-world application. Example, "We learn what scientists/technicians/engineers/mathematicians or other STEM professionals do."

[2] Martella, R., Nelson, J., Morgan, R., & Marchand-Martella, N. (2013). *Understanding and Interpreting Education Research*. New York, NY: The Guilford Press.
[3] See Appendix A for information related to the construct reliabilities of the ALSQ.

Results and Discussion

ALSQ Survey Constructs

Table 2 summarizes students' responses to the ALSQ survey constructs across all programs. In aggregate, students showed statistically significant increases in *Intrinsic Motivation, Self-Management/Self-Regulation,* and *Intent to Persist*. In addition to assessing statistical significance from "before" to "now," effect sizes—a measure of the magnitude of an intervention on students' attitudes—were computed. Specifically, effect sizes were computed using Cohen's *d* and are intended to measure the practical importance of a significant finding.[4] Cohen (1988) classified effect sizes as small, $d < 0.2$; medium, $0.2 \leq d \leq 0.8$; and large, $d > 0.8$.[5] Table 2 suggests large effect sizes were found for *Intrinsic Motivation,* and medium effect sizes were found for *Self-Management/Self-Regulation* and *Intent to Persist*. The largest effect size observed was for *Intrinsic Motivation* (d=0.89). This suggests that the programs were at least moderately effective in enhancing student interest in learning and deriving value from the material taught. For example, after participating in the programs, 79% of students said they think what they are learning in the programs is interesting, compared to 49% before the programs. See Tables 5-9 for more information.

To maximize impact, students' average scores should exceed 4.00 on a 5-point Likert scale (1, *Strongly Disagree* to 5, *Strongly Agree*). The *Intrinsic Motivation* construct was the only one to have a "now" score that reached or exceeded the optimal average of 4.00. The construct with the lowest "now" score was *Intent to Persist.* Figure 1 suggests that all constructs need additional focus by all programs, particularly developing student interest in STEM fields.

Table 2. Summary of Results by Construct[6]

Overall - Constructs				
Constructs	**n**	**Mean**[1]	**Paired Samples t-test**[2]	**Effect Size (interpretation)**[3]
Intrinsic Motivation	Before 151	3.40	p<0.001**	0.89 (Large)
	Now 151	4.04		
Self-Management / Self-Regulation	Before 151	3.28	p<0.001**	0.67 (Medium)
	Now 151	3.70		
Intent to Persist	Before 149	3.18	p<0.001**	0.45 (Medium)
	Now 149	3.56		
Problem Solving	Now 148	3.90	--	--
Implementation Activities	Now 148	3.88	--	--

[1]Reference lines are set at 3.5 and 4. [2]Note: Only students with matched Pre and Post data were assessed for significance. Desired statistically significant changes are highlighted in green. Negatively worded statements were reverse coded for mean computations. **p<0.001, *p<0.01, †p<0.05. See Tables 5-9 for more detailed information. [3]Effect size (Cohen's d): Small (<.2); Medium (.2 to .8); Large (>.8). Small effect sizes are highlighted in light red; medium effect sizes are highlighted in dark orange; large effect sizes are highlighted in dark green.

[4] Effect sizes were calculated using Stata.

[5] Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed). Hillsdale, NJ: Lawrence Earlbaum Associates.

[6] As indicated by the n size, all students did not answer all questions in the constructs and demographics sections.

Figure 1. Constructs

Note. A paired samples t-test was used to compute the p-value. **p<0.001, *p<0.01, †p<0.05.

ALSQ Survey Constructs by Program

After disaggregating the data by program, all programs showed statistically significant increases in *Intrinsic Motivation, Self-Management/Self-Regulation,* and *Intent to Persist*. All programs exhibited their largest effect size in *Intrinsic Motivation.* Two programs had large effect sizes for *Intrinsic Motivation and Self-Management/Self-Regulation.* All other programs and constructs had medium effect sizes. These data suggest that the individual programs were moderately effective at enhancing students' motivations to succeed and their intent to persist in STEM education and careers.

Table 3. Summary of Results by Constructs per Program

Overall - Constructs per Program										
Constructs		**Carroll County (Step into STEM & Full STEAM Ahead) (n=65)**			**Gwinnett County Gear Up for Graduation (n=76)**			**Hall County Career Pathways (n=8)**		
		Mean	***t-test***	**Effect Size**	**Mean**	***t-test***	**Effect Size**	**Mean**	***t-test***	**Effect Size**
Intrinsic Motivation	Before	3.31	p<0.001**	1.08 (L)	3.48	p<0.001**	0.66 (M)	3.35	p<0.001**	1.83 (L)
	Now	4.05			3.99			4.42		
Self-Management / Self-Regulation	Before	3.25	p<0.001**	0.91 (L)	3.34	p<0.001**	0.41 (M)	2.84	p<0.001**	1.43 (L)
	Now	3.77			3.62			4.02		
Intent to Persist	Before	3.11	p<0.001**	0.67 (M)	3.34	p<0.001**	0.28 (M)	2.15	p<0.001**	0.54 (M)
	Now	3.63			3.58			2.78		
Problem Solving	Now	3.89	--		3.88	--		4.09	--	
Implementation Activities	Now	3.99	--		3.81	--		3.73	--	

Note: Only students with matched Pre and Post data were assessed for significance. Desired statistically significant changes are highlighted in green. Negatively worded statements were reverse coded for mean computations. **p<0.001, *p<0.01, †p<0.05. See Tables 5-9 for more detailed information. Effect size (Cohen's d): Small (<.2); Medium (.2 to .8); Large (>.8). Small effect sizes are highlighted in light red; medium effect sizes are highlighted in dark orange; large effect sizes are highlighted in dark green. Additionally, note that the sample size for Hall County's Career Pathways program is only 8 students.

For programs to maximize their effectiveness, "now" scores should reach or exceed the optimal average of 4.00 on a 5-point Likert scale (1, *Strongly Disagree* to 5, *Strongly Agree*). Figures 2-6 display "now" scores for each program and construct. For example, Figure 2 indicates that two programs met or exceeded the optimal average for *Intrinsic Motivation*, but one program fell short of the optimal average. In general, programs not reaching or exceeding the red horizontal line may need additional attention. For instance, at least two programs did not reach the optimal average for *Self-Management/Self-Regulation* (Figure 3), *Intent to Persist* (Figure 4), *Problem Solving* (Figure 5), and *Implementation Activities* (Figure 6). It is important to take caution when interpreting the results for the Hall County/TCSG Career Pathways program given the small sample size (n=8).

Figure 2. Intrinsic Motivation ("Now" Scores)

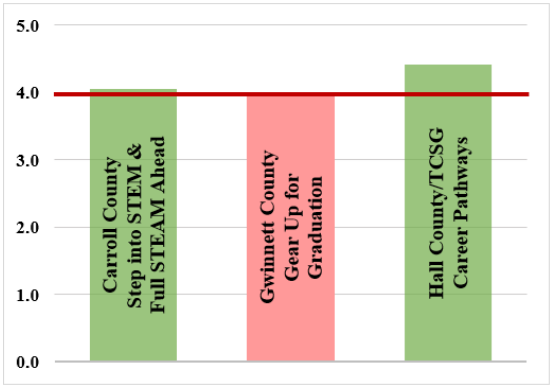


Figure 3. Self-Management/Self-Regulation ("Now" Scores)

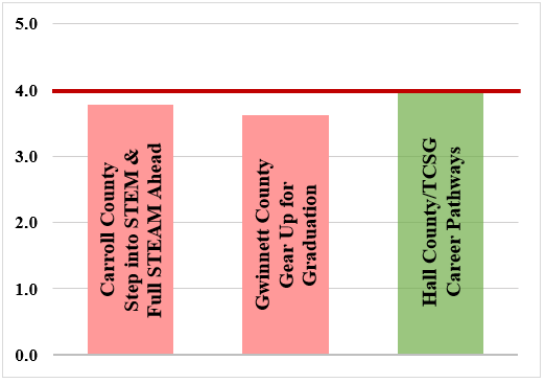


Figure 4. Intent to Persist ("Now" Scores)

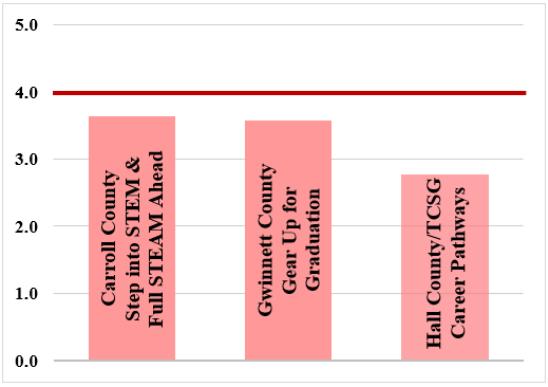


Figure 5. Problem Solving ("Now" Scores)

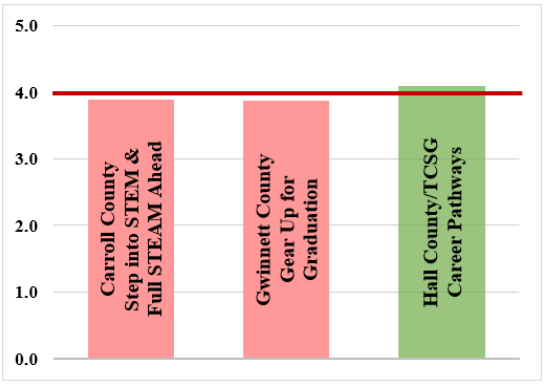


Figure 6. Implementation Activities ("Now" Scores)

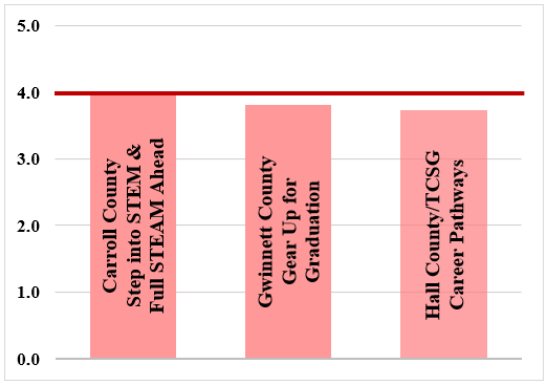
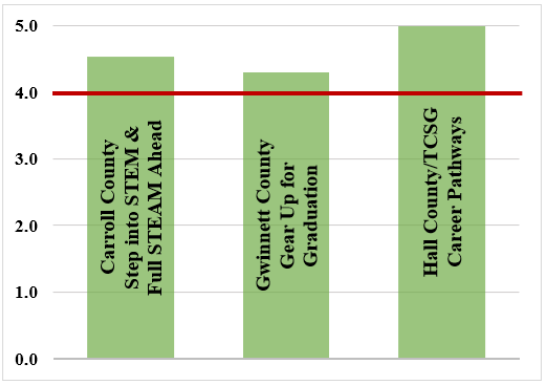


Figure 7. Overall Program Ratings



Program Rating

Across all programs, students' ratings of their programs exceeded the optimal average of 4.00. On a 5-point Likert scale where 1 signifies *Very Poor* and 5 signifies *Excellent*, the average score was 4.44. All programs were rated above the optimal average. These ratings suggest that students viewed the programs positively.

Table 4. Program Rating

Program Rating:	n	Mean		Assessment		(1) Very Poor	(2) Poor	(3) Average	(4) Good	(5) Excellent
All Students	148		4.44	Good		1%	1%	7%	32%	58%

[1]Reference lines are set at 3.5 and 4.0. Assessment: Good = Above 4.0; Attention = Below 4.0; Action = Below 3.5. Highest percentages are highlighted in gray.

Areas for Further Improvement

Intrinsic Motivation (4.04) was the only construct to exceed the optimal average of 4.00 on a 5-point Likert scale, despite the statistically significant gains in the *Self-Management/Self-Regulation* and *Intent to Persist* constructs. All sub-items in *Intrinsic Motivation* showed statistically significant increases, but two sub-items still had "now" scores below the optimal mean:

- Preference for challenging classwork (3.64), and
- Ability to use knowledge from this program in other classes (3.98).

All sub-items in *Self-Management/Self-Regulation* showed statistically significant increases except "I miss class often" and "I am often late for class." These negatively worded items did show decreases, but the decreases were not statistically significant.

Though the "now" means for *Implementation Activities* and *Problem Solving* constructs were both above 3.80, certain items within those constructs require attention. Within the *Problem Solving* construct, particular areas of concern include:

- Students working out explanations on their own (3.59),
- Students planning and doing their own projects and experiments (3.68), and
- Teachers letting students choose their own topics or projects to investigate (3.70).

Within the *Implementation Activities* construct, areas requiring attention include:

- Students interacting with STEM professionals (3.73),
- Students working in groups (3.75), and
- Students learning what STEM professionals do (3.80).

The construct with the lowest "now" mean was *Intent to Persist* (3.56), though all sub-items in this category showed statistically significant increases. The lowest rated items refer to the students envisioning themselves in a STEM career. The students' ratings suggest that programs should enhance the inquiry-based learning environment to promote student motivation and interest in STEM. Giving students more agency over their own work and increasing exposure to STEM professionals and real-world problems may enhance students' intentions to persist in STEM education and careers.

Table 5. Intrinsic Motivation

Intrinsic Motivation		n	Mean[1]	Paired Samples t-test[2]	1 (Strongly Disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly Agree)
1) I prefer class work that is challenging so I can learn new things.	Before	151	2.88	p<0.001**	12%	19%	42%	22%	5%
	Now	151	3.64		6%	4%	27%	46%	17%
2) It is important to me to learn what is taught in this program.	Before	151	3.56	p<0.001**	3%	7%	36%	36%	17%
	Now	151	4.23		1%	2%	14%	38%	45%
3) I like what I am learning in this program.	Before	151	3.50	p<0.001**	4%	7%	38%	38%	13%
	Now	151	4.12		1%	2%	20%	37%	40%
4) I think I will be able to use what I learn in this program in other classes.	Before	151	3.48	p<0.001**	5%	9%	34%	39%	13%
	Now	151	3.98		2%	5%	16%	46%	30%
5) Even when I do poorly on a test, I try to learn from my mistakes.	Before	151	3.32	p<0.001**	7%	12%	35%	35%	11%
	Now	151	4.05		3%	2%	17%	44%	34%
6) I think that what I am learning in this program is useful for me to know.	Before	151	3.56	p<0.001**	2%	11%	33%	38%	16%
	Now	151	4.07		2%	3%	15%	44%	35%
7) I think that what we are learning in this program is interesting.	Before	151	3.44	p<0.001**	5%	11%	36%	34%	15%
	Now	151	4.03		3%	3%	15%	48%	32%
8) Understanding STEM (Science, Technology, Engineering, and Math) is important to me.	Before	151	3.58	p<0.001**	5%	7%	29%	41%	17%
	Now	151	4.20		1%	2%	11%	46%	39%
9) I enjoy STEM (Science, Technology, Engineering, and Math) in general.	Before	151	3.30	p<0.001**	9%	7%	42%	29%	13%
	Now	151	4.03		2%	2%	24%	36%	36%

Note. [1]Reference lines are set at 3.5 and 4. [2]Please note that only students with matched Pre and Post data were assessed for significance. Desired statistically significant changes are highlighted in green and undesired statistically significant changes are highlighted in red. **p<0.001, *p<0.01, †p<0.05. Highest percentages are highlighted in gray.

Table 6. Self-Management / Self-Regulation

Self-Management/Self-Regulation		n	Mean[1]	Paired Samples t-test[2]	1 (Strongly Disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly Agree)
10) I turn all my assignments in on time.	Before	151	2.95	p<0.001**	11%	21%	40%	16%	11%
	Now	151	3.56		4%	7%	35%	38%	16%
11) I miss class often. (negatively worded)	Before	151	2.44	p=0.0541	26%	27%	27%	15%	5%
	Now	151	2.26		36%	26%	21%	11%	6%
12) I am often late for class. (negatively worded)	Before	151	2.52	p=0.1107	38%	21%	23%	13%	5%
	Now	151	2.11		43%	26%	15%	11%	6%
13) I set aside time to do my homework and study.	Before	151	2.70	p<0.001**	19%	19%	38%	19%	4%
	Now	151	3.25		12%	7%	36%	32%	12%
14) When I say I'm going to do something, I do it.	Before	151	3.28	p<0.001**	7%	10%	44%	26%	13%
	Now	151	3.75		3%	7%	27%	40%	23%
15) I am a hard worker.	Before	151	3.44	p<0.001**	3%	11%	38%	36%	13%
	Now	151	3.94		1%	5%	23%	42%	30%
16) I finish whatever I begin.	Before	151	3.26	p<0.001**	7%	10%	44%	30%	10%
	Now	151	3.79		3%	5%	25%	44%	23%

Note. [1]Reference lines are set at 3.5 and 4. [2]Please note that only students with matched Pre and Post data were assessed for significance. Desired statistically significant changes are highlighted in green. **p<0.001, *p<0.01, †p<0.05. Highest percentages are highlighted in gray. Statements 11 and 12 are negatively worded; signficance is measured in the reverse direction as the other statements.

Table 7. Intent to Persist

Intent to Persist		n	Mean[1]	Paired Samples t-test[2]	1 (Strongly Disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly Agree)
17) I am considering a career in STEM (Science, Technology, Engineering, and Math).	Before	149	2.89	p<0.001**	13%	18%	42%	19%	7%
	Now	149	3.37		7%	12%	34%	29%	17%
18) I intend to get a college degree in STEM (Science, Technology, Engineering, and Math).	Before	149	2.95	p<0.001**	13%	13%	48%	17%	8%
	Now	149	3.33		6%	13%	38%	30%	14%
19) I can see myself working in STEM (Science, Technology, Engineering, and Math).	Before	149	2.89	p<0.001**	13%	15%	48%	17%	7%
	Now	149	3.31		7%	13%	35%	30%	15%
20) Someday, I would like to have a career in STEM (Science, Technology, Engineering, and Math).	Before	149	2.93	p<0.001**	12%	12%	53%	16%	7%
	Now	149	3.27		7%	13%	42%	22%	16%
21) I intend to graduate from high school.	Before	149	4.21	p<0.001**	3%	3%	21%	17%	56%
	Now	149	4.51		2%	1%	11%	17%	69%

Note. [1]Reference lines are set at 3.5 and 4. [2]Please note that only students with matched Pre and Post data were assessed for significance. Desired statistically significant changes are highlighted in green. **p<0.001, *p<0.01, †p<0.05. Highest percentages are highlighted in gray.

Table 8. Problem Solving (Now Only)

	Problem Solving	n	Mean[1]		Assessment	1 (Strongly Disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly Agree)
22)	In this program, my teacher(s) tells me how to improve my work.	148		4.19	Good	1%	2%	11%	47%	39%
23)	In this program, my teacher(s) lets us choose our own topics or projects to investigate.	148		3.70	Attention	1%	7%	33%	39%	20%
24)	In this program, I work out explanations on my own.	148		3.59	Attention	3%	4%	38%	43%	13%
25)	In this program, I have opportunities to explain my ideas.	148		3.88	Attention	1%	3%	25%	51%	20%
26)	In this program, we plan and do our own projects and/or experiments.	148		3.68	Attention	3%	4%	30%	47%	16%
27)	In this program, we work on real-world problems.	148		3.93	Attention	2%	2%	26%	41%	29%
28)	In this program, we have class discussions.	148		4.07	Good	1%	3%	16%	49%	32%
29)	In this program, we investigate to see if our ideas are right.	148		3.91	Attention	1%	3%	23%	48%	24%
30)	In this program, we need to be able to think and ask questions.	148		4.04	Good	1%	1%	19%	49%	30%
31)	In this program, we are expected to understand and explain ideas.	148		3.97	Attention	1%	0%	25%	47%	26%

Note. [1]Reference lines are set at 3.5 and 4.0. Assessment: Good = Above 4.0; Attention = Below 4.0; Action = Below 3.5. Highest percentages are highlighted in gray.

Table 9. Implementation Activities (Now Only)

Implementation Activities	n	Mean[1]	Assessment	1 (Strongly Disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly Agree)
32) In this program, my teacher(s) takes notice of students' ideas.	148	4.07	Good	1%	1%	18%	51%	29%
33) In this program, my teacher(s) shows us how new information relates to what we have already learned.	148	4.07	Good	0%	1%	20%	49%	30%
34) In this program, we learn what scientists/ technicians / engineers / mathematicians or other STEM professionals do.	148	3.80	Attention	3%	2%	31%	41%	23%
35) In this program, we do our work in groups.	148	3.75	Attention	1%	6%	27%	47%	18%
36) In this program, we interact with scientists / technicians / engineers / mathematicians or other STEM professionals.	148	3.73	Attention	2%	3%	37%	36%	22%

Note. [1]Reference lines are set at 3.5 and 4.0. Assessment: Good = Above 4.0; Attention = Below 4.0; Action = Below 3.5. Highest percentages are highlighted in gray.

Table 10. Educational Plans

What is the highest level of education you plan to achieve?	Before		Now		*Change*[1]	
	n	%	n	%	n	% points
High School	71	48%	46	32%	-25	-16%
2-year college	21	14%	30	21%	9	7%
4-year college	26	18%	30	21%	4	3%
Graduate School	17	11%	17	12%	0	1%
Professional School	13	9%	20	14%	7	5%
Total	**148**	**100%**	**143**	**100%**		
Average[2]	**2.10**		**2.41**		**p=0.001* (significant)**[3]	

[1] Change from Before to Now. Increases are highlighted in green; decreases are highlighted in red. [2]To compute averages, the following codes were applied: High School (1), 2-year college (2), 4-year college (3), Graduate School (4), Professional School (4).
[3]Paired samples t-test, p-value: **p<0.001, *p<0.01, †p<0.05.

Table 11. Demographics – Gender

Gender	n	%
Female	57	39%
Male	89	61%
Total	**146**	**100%**

Table 12. Demographics – Ethnicity

Ethnicity	n	%
Asian	5	3%
Black	19	13%
Hispanic	60	41%
White	49	33%
Multiracial	8	5%
Other	7	5%
Total	**148**	**100%**

Table 13. Demographics – Grade

Grade	n	%
7th	1	1%
8th	17	11%
9th	72	49%
10th	48	32%
11th	3	2%
12th	7	5%
Total	**148**	**100%**

Table 14. Length of Participation

How long have you participated in this program?		n	%
	1 semester	18	12%
	2 semesters	110	74%
	3 semesters	9	6%
	4 or more semesters	10	7%
	Don't Know	1	1%
	Total	**148**	**100%**

Table 14. Summer Participation

Did you participate in this program during the summer?		n	%
Summer Participation	Yes	11	8%
	No	133	92%
	Total	**144**	**100%**

Appendix A. Construct Reliabilities

Table A1. Construct Reliabilities (Omnibus, December 2018)

Constructs		Cronbach's alpha	*Reliability Interpretation*
Intrinsic Motivation (9 items)	Before	0.904	*Excellent*
	Now	0.904	*Excellent*
Self-Management/Self-Regulation (7 items)	Before	0.697	*Somewhat low*
	Now	0.674	*Somewhat low*
Intent to Persist (5 items)	Before	0.862	*Very Good*
	Now	0.861	*Very Good*
Problem Solving (10 items)	Now	0.880	*Very Good*
Implementation Activities (5 items)	Now	0.819	*Very Good*

Cronbach's Alpha Reliability Key: Cronbach's alpha is a measure of the internal consistency of items in a construct. This statistic ranges from 0 to 1; the higher the value the better. An alpha of 0.80 or higher is considered to have achieved very good measurement reliability; an alpha of 0.65 is considered acceptable (Field, 2009).

Reliability	Interpretation
0.90 and above	Excellent reliability; at the level of the best measures
0.80 – 0.90	Very good
0.70 – 0.80	Good; in the range of most. There are probably a few items which could be improved.
0.60 – 0.70	Somewhat low. This measure needs to be supplemented by other measure (e.g., more surveys) to determine outcomes. There are probably some items which could be improved.
0.50 – 0.60	Suggests need for revision of measure, unless it is quite short (ten or fewer items). The test definitely needs to be supplemented by other measure (e.g., more tests).
0.50 or below	Questionable reliability. This measure should not contribute heavily to the outcomes and needs revision.

From: J. C. Nunnally, Psychometric Theory. New York: McGraw-Hill, 1967, pp. 172-235.

Reference:

Field, A. (2009). *Discovering Statistics Using SPSS, 3rd Edition.* Thousand Oaks, CA: Sage Publications.