

Appendix D

CSO Leadership Training Institute Analysis

CSOs were asked to complete pre and post surveys aimed at assessing several aspects of their experience before and after completing the Leadership Training Institute. We analyzed a sample of their responses using the t-test.

First, CSOs rated their confidence in communicating their role as a CSO to a) fellow CSOs, b) family, c) peers, d) adults in the community, e) elected officials, and f) local news stations, as well as g) via blog posts. A significant p-value of less than 0.0001 was found (see Table 1).

Table 1. Comparison of CSOs' confidence in communicating their roles to stakeholders

	T	DF	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Pre Total	32.348	75	.000	24.10526	22.6208	25.5897
Post Total	44.706	75	.000	29.07895	27.7832	30.3747

Second, CSOs were asked to assess their sense of connection to a) peers, b) teacher points of contact, c) fellow CSOs, d) the program team, and e) STEM professionals in the community. We found that the p-value was less than 0.0001, which is significant for the post-test (see Table 2).

Table 2. Comparison of CSOs' ability to connect with stakeholders

	T	DF	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Pre Total	35.498	75	.000	17.00658	16.0522	17.9610
Post Total	43.396	75	.000	20.36842	19.4334	21.3034

Third, CSOs were asked to assess their preparedness to a) talk with their friends about STEM, b) support a STEM event at their school, c) grow the appeal of STEM at their school, d) support a STEM initiative in their area, e) support a state-wide STEM initiative, and f) collaborate with other CSOs on projects. We found a p-value of less than 0.0001 (see Table 3).

Table 3. Comparison of CSOs' preparedness to talk with stakeholders

	T	DF	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference
--	---	----	-----------------	-----------------	---

					Lower	Upper
Pre Total	46.274	74	.000	23.93333	22.9028	24.9639
Post Total	46.967	75	.000	26.03289	24.9287	27.1371

Finally, CSOs were asked about their confidence in doing demonstration on a STEM topic for their a) fellow CSOs, b) family, c) peers, d) adults in the community, and e) a local news station, as well as f) via blog posts. We placed particular significance on this assessment given that CSOs receive special training in how to get others excited about STEM with a short, high-energy demonstration. We found that the p-value was less than 0.0001, which is significant for a post test (see Table 4).

Table 4. Comparison of CSOs' confidence in doing a science demonstration for stakeholders

	T	DF	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Pre Total	37.748	75	.000	22.09211	20.9262	23.2580
Post Total	45.483	75	.000	25.30263	24.1944	26.4109