

IMPLEMENTING LONG TERM COLLABORATIONS BETWEEN SCHOOLS AND MUSEUMS

John Falk, Ph.D.
Sasha Palmquist, Ph.D.

STEM 360:
Multi-Setting, Multi-Platform
STEM Education Engagement
Program & Research Study

What: A 2-year Multi-platform STEM Education Engagement Program and Research Study

Why: Building on research about what works the purpose of the project is to investigate whether a comprehensive suite of interventions – both in- and out of-school - could measurably improve children’s STEM interest, engagement, and workforce awareness

Who: A cohort of over 1,000 4th grade students from Hampton, Newport News, and Suffolk

When: From the commencement of their 4th grade school year (2016-2017) to the end of their 5th grade year (2017-2018).

Where:

- In-school Educational Outreaches
- Education Field Trips to VASC and other informal STEM institutions
- Family and Out-of-School Time Engagement
- STEM Coach Engagement and Support through STEM Ambassadorship

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Methods

- All participants completed baseline surveys at the beginning of the study during the 4th grade school year
- Educational interventions were scheduled and delivered throughout the school year
 - Responsive to academic calendar
 - Aligned with target science learning outcomes
- Student engagement with educational experiences were observed and aggregate impacts collected by educators and shared with the research team
- All participants repeated surveys at the conclusion of the 4th grade school year

Results after 1 Year:



STEM 360 youth significantly:

- ↑ **STEM Interest:** Program has increased student interest in STEM.
- ↑ **STEM Engagement:** Students reported increased frequency of engagement with STEM learning in their everyday lives.
- ↑ **STEM Career Awareness:** Program has increased student awareness of the diversity of STEM careers.

STEM 360 Challenges:

- Working with schools, particularly within U.S. context where there are multiple districts involved, each with own rules and administration. Every Teachers too has own agenda and each school their own unique priorities.
- Coordinating with other free-choice institutions (see above).
- Convincing Science Centre staff that this approach is really necessary, and it really is their job to support children and other institutions beyond the 4 walls of the Science Centre.



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- It [STEM 360] is a cool program, I was able to make roller coasters, cars, and fish for ice. I remembered some of the stuff that I learned and I have shared things that I did with my teacher and classmates. – *4th grader from Hampton*
- This program has provided my students with experiences that incorporate not only what they need to know... but how they can apply this new knowledge to current content and future content --*STEM 360 Educator*

