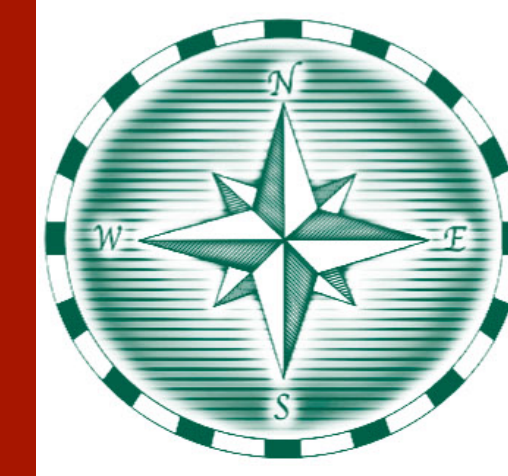




Building Creative Confidence Through Making

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IBSC

Introduction

- Boys are exposed to a rigorous classical curriculum that is largely taught through traditional teaching styles.
- The boys are trained to follow a rubric, and feel safe as long as they are comfortable in the understanding of “what the teacher is looking for”.
- I was skeptical of their comfort and experience with open-ended problems; particularly those who are motivated less by the teacher’s outlined expectations, but instead by their own interests and curiosities.
- The boys don’t often get to flex their creative muscle, particularly in “non-artistic” courses. They do not have the opportunity to develop their creative confidence, particularly in the STEM fields.
- More opportunities might aid the boys’ development into open-minded, creative, inventive and innovative young men who are able to dive head-first into a problem with the confidence that they can find an interesting solution.

The Research Question

How might a series of increasingly broad and open-ended Maker projects in Math-Science instill in 9th Grade boys the creative confidence to confront an unknown, and to find a creative solution?

Research Context

The Roxbury Latin School is the oldest school in continuous existence in North America, founded by John Eliot in 1645. At Roxbury Latin, we care, most of all, about what kind of person a boy is. Every aspect of our program supports our core values of honesty, responsibility, humility, respect, and concern for others.

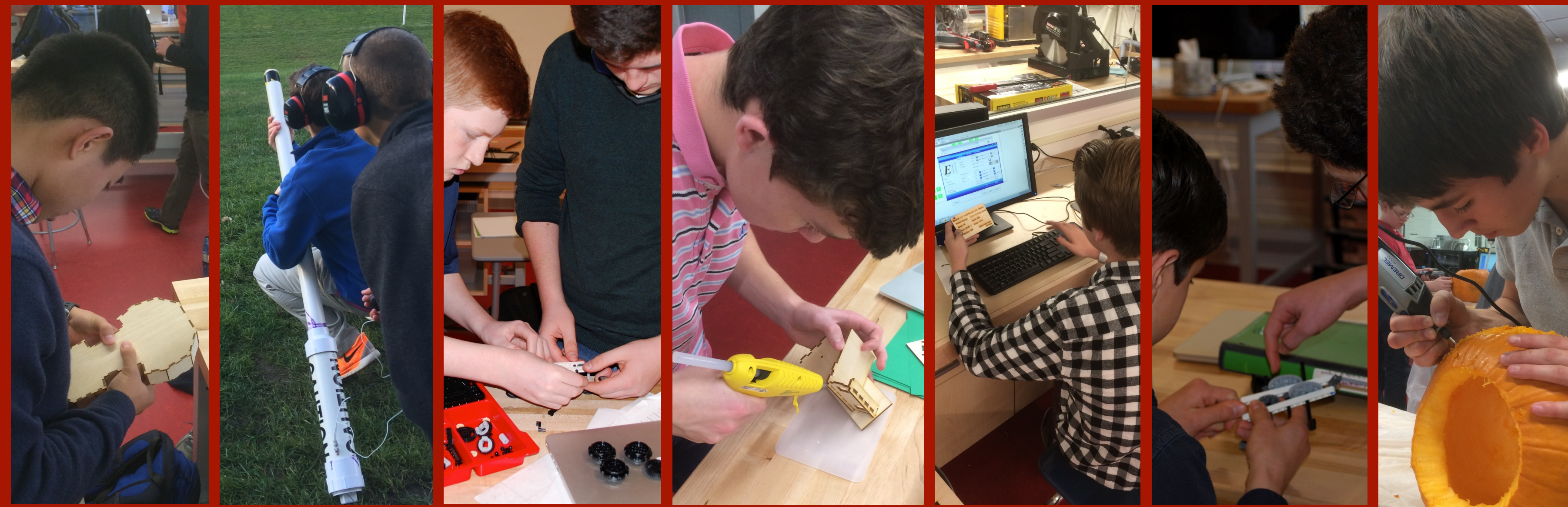
Participants

The participants in my research were 14 9th Grade boys in my section of a new course called MSI, or Math-Science Investigations. It is an integrated STEAM-based course, replacing their traditional 9th Grade Math class.

The Research Action

The new 9th Grade Math-Science Investigations course is not specifically a Maker course, but the projects that were chosen all incorporate significant Maker themes:

- “Ewok Escape”: A challenge to build a balancing cart that will traverse a zipline while staying upright on top of the line
- A laser cut speaker box enclosure that enhances the audio quality
- A digitally designed and laser cut “animation disc,” which displays a repeating animation as it spins under a strobe light
- A series of Arduino electronics projects, culminating in a two-wheeled line-following robot



Data Collection

- Primarily qualitative in nature
- In-class observation
- Boys’ reflections in their online course blogs
- Periodic online surveys
- Video interviews
- Questioning before and after projects

Data Analysis

As I collected data from the boys, I identified, categorized, and coded the results into thematic areas. Once themes were identified, I analyzed key experiences by looking for the main features of each experience and looking for connections to my research question.

Key Findings and Discussion

- Open-ended projects are foreign and challenging for many of the boys

“When the assignment is left open-ended, I don’t typically take risks because I don’t know whether or not they are acceptable since there are not as many guidelines”

“I feel like as students we’re hard-wired to look for guidelines, and look for what the teacher wants, so it takes a little getting used to try to be really, really creative, so I think that holds you back a little bit...”

- 12 out of the 14 boys adapted quickly to the style of the course, and were able to gain confidence in their creative endeavors

“Yea, I think I’d feel a lot more confident with those kinds of creative projects...that mindset of what do I need to think about first, and how am I going to go about trial and error, is the way I go about it”

“I think too, you know you’re going to fail with these projects at some point, you’re going to mess up, you’re going to get something wrong...I think that this class has really prepared us well to have an idea of what you’re going to do before the process starts, and following through with that idea and how you’re going to do it”

“I think that coming out of it, I now understand that you can really do what you want...and stretch the limits of a project, just making it better”

- 11 of the boys found that a different kind of satisfaction came from a project that they were able to guide with their own curiosity and self-motivation

“There was no specific way that the projects had to be done, so we could really develop unique creative ideas before finding the one that worked the best, which was a challenging yet satisfying experience”

- Not only did most of the boys develop some confidence in their creativity, most of the boys also agreed that building creative confidence in one class can bolster creative confidence in other areas

“I believe that if you boost your creativity in any area, your creativity overall will be boosted. I believe that you can boost your creative confidence in general”

“...when you become more confident in one phase of life, for me, I become more confident in other phases too. It can be the same for different classes. If you realize how creative you can be in a class like MSI, then you might, on your next English paper, you might see how you can pull in connections from other stories...”

Conclusions

- A series of increasingly broad and open-ended Maker projects **can** begin to develop boys’ creative confidence and creative problem-solving skills.
- Taking away too many restraints too quickly in the interest of an open-ended project was counterproductive, and left the boys confused and frustrated.
- Scaffolding and guidance need to be removed gradually as the boys get used to the different style of learning.
- The boys were most successful when they were given timely feedback and guidance, and were then allowed time for several drafts or iterations to explore the material and their creativity in more depth.



Key Readings

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Further Information

This poster and further information is available at <http://www.theibsc.org/>.

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