

2019

IRONDALE YOUTH STEAM PROGRAMS INSTILL RESPONSIBILITY, ACCOUNTABILITY, CRITICAL THINKING AND TEAMWORK



INTRODUCTION

Irondale has been a leading theater arts educator for more than 35 years. The organization has partnered with local schools as well as major environmental, technical, medical and engineering organizations, to stimulate the development of well-rounded, informed, and attuned, 21st century thinkers. With over 30,000 students served, Irondale has embraced social responsibility, turning the classroom into a stage with heightened communication and understanding of information. Irondale's STEM to STEAM (the A is for Acting) programs incorporate acting, improvisation, as part of a STEM curriculum, to train articulate, passionate and clear communicators.



Schools engaged by these programs include, NYU Polytechnic School of Engineering 's Applied Research Innovations in Science and Engineering (ARISE) program, Wave Hill's Woodland Ecology Research Mentorship (WERM) program, Columbia University and Lamont-Doherty Earth Observatory's Second School Field Research Program (SSRP), Rockefeller University's After School Program and Summer Science Research Program (SSRP), Center for Excellence in Youth Education at Mount Sinai's Lloyd Sherman Scholars Program, Rockaway Waterfront Alliance's The Environmentor Program, DNA Learning Center of Cold Spring Harbor Laboratory's Urban Barcode Research Program (UBRP), CUNY CREST Institute, The City College of New York's High School Initiative in Remote Sensing of the Earth Systems Science and Technology (HIRES), American Museum of Natural History's Science Research Mentoring Program, Columbia University, Zuckerman Mind Brain Behavior Institute, Brain Research Apprenticeships In New York at Columbia (BRAINYAC), and City College of New York and Queens College's College Now Program, ages 14-18..

With the support of The Pinkerton Foundation, Con Edison and other partners, Irondale employs over 10 of NY's finest theater artists to provide students with the skills to be able to reflect on, articulate and understand how they know what they've learned. These programs also address the social science skills of psychology, sociology and organizational development.

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BACKGROUND/ PROBLEM STATEMENT

The concept of STEM education—a curriculum based on the idea of educating students in four specific disciplines: science, technology, engineering and mathematics, in an interdisciplinary and applied approach—has made its way to the heart of the ongoing education debate. At Irondale, a Brooklyn-based theater think-tank, STEAM education is refreshing the STEM model with a curriculum update committed to activism, education, and communication through a conduit of performance and workshop. With a dedicated focus on 21st century learners, and the proven importance of a STEM education, Irondale is a leading organization in the integration and implementation of acting into a student's curriculum. With STEM to STEAM (the A is for Acting), Irondale affirms that students who receive hands-on training in acting and improvisation, will become more sophisticated presenters of scientific and academic research, develop more sophisticated social science and “soft” skills, and better prepare them for their professional careers.



Acting as a team player: Cooperative, but also displaying strong leadership skills when necessary.



Accepting feedback: A demonstration of grace and a willingness to apply that feedback to foster professional growth.



Flexibility: Those who can adapt to any situation are dependable no matter what's thrown at them.



Confidence: An assertiveness to encourage faith from supervisors, employees, and clients.



Effective communication: Communication involves articulating oneself well, being a good listener and using appropriate body language.

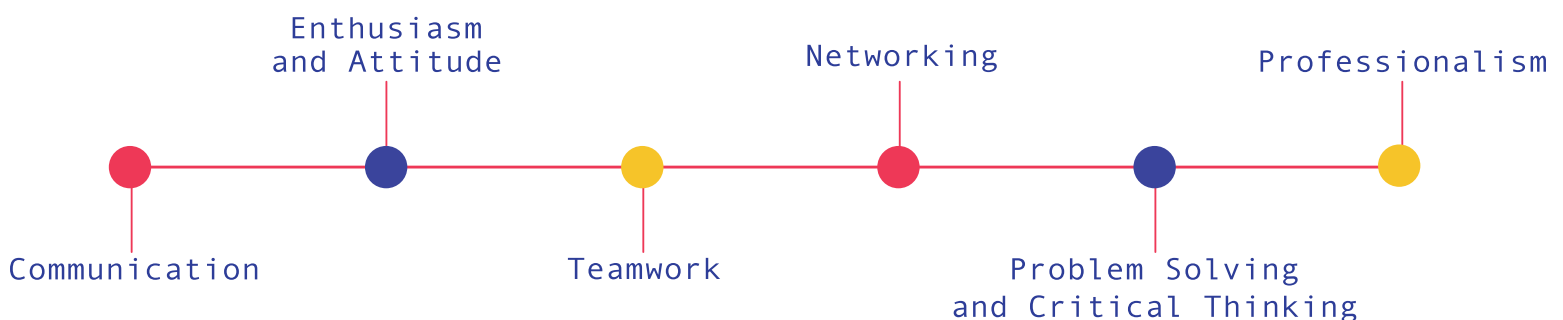


Creative thinking: Being able to come up with unique solutions or alternatives drives innovation and increases efficiency.



Problem-solving and resourcefulness: Ability to handle unexpected issues that inevitably arise.

Furthermore, The US Department of Labor has identified six workplace soft skill focuses:



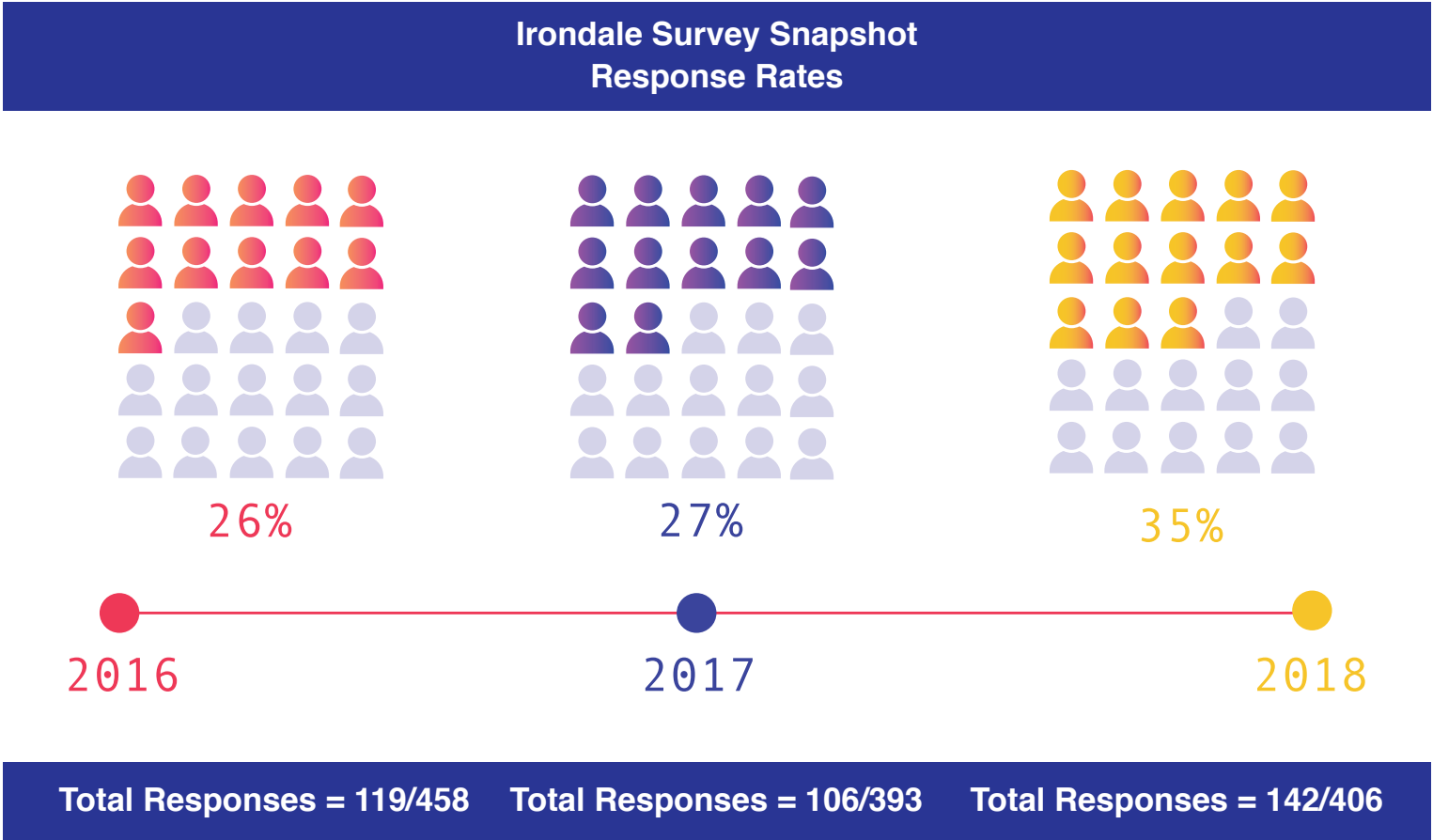
Among the eight most important qualities of Google's top employees, STEM expertise comes in dead last. The seven top characteristics of success at Google are all soft skills: being a good coach; communicating and listening well; possessing insights into others (including different values and points of view); having empathy toward and being supportive of one's colleagues; being a good critical thinker and problem solver; and being able to make connections across complex ideas. A recent survey of 260 employers by the nonprofit National Association of Colleges and Employers, which includes both small firms and major corporations like Chevron and IBM, also ranks communication skills in the top three most-sought after qualities by job recruiters. They prize both an ability to communicate with one's workers and an aptitude for conveying the company's product and mission outside the organization. Even billionaire venture capitalist and "Shark Tank" TV personality Mark Cuban looks for philosophy majors when he's investing in sharks most likely to succeed.

“Furthermore, Eric Berridge, co-founder of global consulting agency and Salesforce strategic partner Bluewolf, an IBM Company, shines a light on the roles artists play in a workplace. “The humanities give us the context of our world,” he explains. “They teach us how to think critically. They are purposely unstructured, while the sciences are purposely structured. They teach us to persuade, they give us our language, which we use to convert our emotions to thought and action. And they need to be on equal footing with the sciences.”



DATA AND RESULTS

In closing Irondale’s summer STEAM workshops in 2016 ,2017 and 2018, Irondale administered a student feedback form to most of the residencies in regard to honing “soft skills.” Questions asked students to reflect on their presentation skills before and after the Irondale residency, how they felt the Irondale workshops related to their presentation skills and confidence levels, what specifically they felt they had learned, and how they enjoyed the residencies overall.



In 2016, 9 of the 12 partner institutions asked their students to participate in Irondale’s survey rendering 119 complete student surveys (26% response rate).

In 2017, 10 of the 13 partner institutions asked their students to participate in Irondale’s survey rendering 106 complete student surveys (27% response rate.)

In 2018, 10 of the 13 partner institutions asked their students to participate in Irondale’s survey rendering 142 complete student surveys (35% response rate).

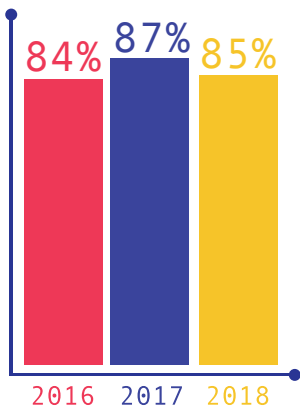
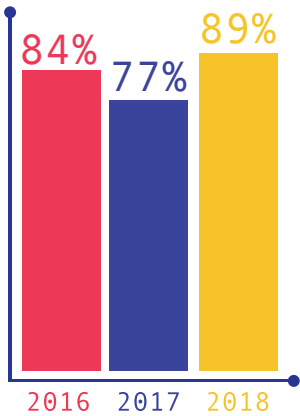
DATA AND RESULTS

Overall, students surveyed over the three years, 2016 -2018, credited Irondale workshops for improvements in their public speaking, creative thinking, confidence, articulation and team skills.

Improved Public Speaking

Increased Confidence

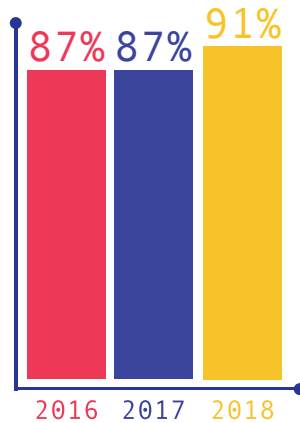
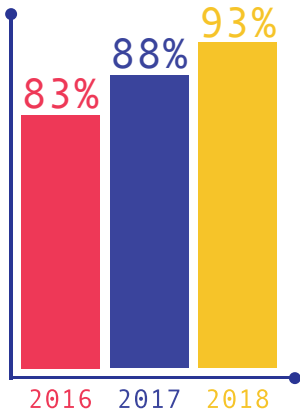
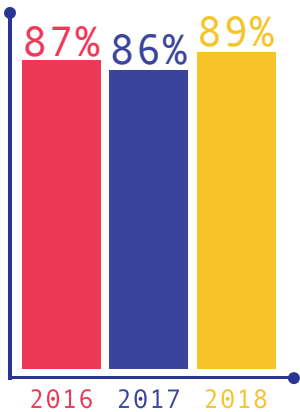
Enhanced Creative Thinking



Better Team Player

Improved Articular Skill

Aquired New Skills



CONCLUSION

Success in the future workplace is directly dependent on one's ability to harness human skills like collaboration, critical thinking, and empathizing with others. To be competitive, education must place additional emphasis on developing skills such as critical thinking, insight, and analysis capabilities, and experiential learning that gives prominence to soft skills such as the ability to collaborate, work in groups, read social cues, and respond adaptively. In incorporating Acting into STEM education, Irondale's tactics have proven that their curriculum has increased the propensity for students to hone the soft skills deemed necessary in workplace success. On the whole, students considered their STEAM workshop with Irondale instructors a positive experience. Public speaking, thinking on their feet, and synthesizing information helped students hone their communication skills, and students were able to make the connection between the skill building exercises at Irondale and other aspects of the program with increased confidence. In building these important "soft skills," Irondale is helping students to best prepare for their STEM futures and provide them with the tools to excel both in future job interviews, and to be an efficient and valuable team member in any workplace.

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RESOURCES

<http://www.naceweb.org/career-readiness/competencies/employers-verbal-communication-most-important-candidate-skill/>

<https://www.naceweb.org/about-us/press/2017/the-key-attributes-employers-seek-on-students-resumes/>

<http://www.businessinsider.com/mark-cuban-liberal-arts-is-the-future-2017-2>

<https://www.thebalancecareers.com/why-soft-skills-are-important-for-managers-4158692>

<http://fortune.com/2013/10/15/5-key-but-neglected-skills-for-success/>

<https://www.dol.gov/odep/topics/youth/softskills/>

<https://www.eab.com/daily-briefing/2018/01/16/the-skills-that-googles-most-valuable-employees-share-and-what-it-means-for-students>

https://www.ted.com/talks/eric_berridge_why_tech_needs_the_humanities/transcript?language=en

<https://www.cbc.ca/news/canada/newfoundland-labrador/medicine-music-connection-1.4770372?fbclid=IwAR3rbH0Pax-jV56omm1XFFskhyILG0CxwmZNx2ruuQLQz6uPR1otPVDBYTg>

<https://psmag.com/education/middle-school-music-and-theater-students-get-better-grades>