

# PROVEN BENEFITS OF



National Inventors  
Hall of Fame®  
EDUCATION PROGRAMS

More than 25 years ago, the National Inventors Hall of Fame® began formally measuring the impact of its programs. During this time, multiple independent evaluations have confirmed both the short- and long-term benefits of these programs.

## CHALLENGES

## OUR EDUCATION PROGRAM SOLUTIONS

### I CAN INVENT® MINDSET

Youth need more opportunities to develop an I Can Invent® Mindset.

- ✓ Peer-reviewed research shows that Camp Invention® supports the cultivation of an inventive mindset as children explore their self-perception as inventors and innovators.<sup>1</sup>
- ✓ Exposure to inventors and invention during childhood can increase the likelihood that a child will become an innovator.<sup>2</sup> The Camp Invention program provides this exposure through our Inductee integration.

### IDENTITY, ACCESS & OUTCOMES

Girls need equitable opportunities in invention and STEM.

- ✓ While girls are less likely than boys to correlate STEM (science, technology, engineering and mathematics) and their identity as an inventive person, they might approach invention from another perspective, such as design or creativity.<sup>1</sup> These perspectives are central to our education programs, which are designed to promote stronger connections between invention and STEM.
- ✓ Patent holders are successful, earning four times the average American household income. If girls were exposed to female inventors at the same rate as boys are to male inventors, the gender gap in innovation would shrink by half.<sup>2</sup> Our Inductees make up a diverse group of inventors who serve as career role models.

### EQUITABLE OPPORTUNITIES

BIPOC youth need equitable opportunities in invention and STEM.

- ✓ Our research on Black youth identity in invention education found that while all learners had positive associations with creating and making, and less positive associations with pitching and presenting, Black youth were far more likely to attribute their discomfort to social anxiety. The National Inventors Hall of Fame evolves its programs based upon research insights that inform best practices in critical areas, such as cultural competency.<sup>3</sup>
- ✓ After one week of Camp Invention, Black, Indigenous and People of Color (BIPOC) youth were shown to have a stronger correlation between engineering and an inventive mindset. BIPOC learners also were more likely than their white counterparts to strongly self-identify as “inventive” after one week of camp.<sup>3</sup>



1. J.K. Garner, E. Matheny, A. Rutledge, and M. Kuhn. Invention Education as a Context for Children's Identity Exploration. *Journal of STEM Outreach*. Vol. 4, Issue 1 (August 2021).

2. A. Bell, R. Chetty, X. Jaravel, N. Petkova, and J. Van Reenen. Who Becomes an Inventor in America? The Importance of Exposure to Innovation. *Opportunity Insights* (2017).

3. J.K. Garner and M. Kuhn. Invention Education Programming: Perceptions of Children and Teacher-Facilitators. A Technical Report Prepared for Camp Invention. The Center for Educational Partnerships, Old Dominion University (January 2022).

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### TEAMWORK

Children need more opportunities to collaborate — an essential skill for the 21st century.

- ✓ Youth have shown improvement in their ability to collaborate after participating in Camp Invention.<sup>4</sup>

### EDUCATOR ENGAGEMENT

Educators are looking for greater support in teaching children the skills necessary to become innovative.

- ✓ Our education programs enable teachers to incorporate more entrepreneurial concepts into their teaching.<sup>4</sup>
- ✓ After leading our programming, educators are more likely to foster risk-taking and create an atmosphere of acceptance of people and ideas.<sup>4</sup>
- ✓ The influence of our education programs on Instructors' teaching strategies can make a positive impact on students beyond those participating in Camp Invention.<sup>4</sup>
- ✓ Our education programs influence educators' pedagogical approaches, including problem solving and hands-on learning, and the specific activities they implement in their classrooms throughout the school year.<sup>5</sup>

### CREATIVE PROBLEM SOLVING

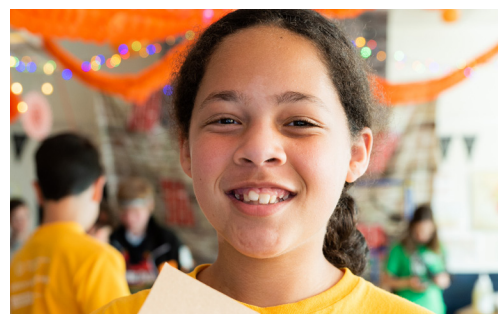
Children need hands-on opportunities to be creative and build problem-solving skills, so they are prepared to take on the challenges of the future.

- ✓ Just one week of Camp Invention results in significant short-term and long-term improvements in creativity, STEM interest, collaboration and problem solving.<sup>4</sup>
- ✓ Students with multiple NIHF education program experiences show higher gains in creativity, STEM interest and problem solving than those with limited or no previous experience.<sup>6</sup>
- ✓ Over the long term, from one to four years after Camp Invention, there is even stronger evidence of growth in creativity, STEM interest and problem solving.<sup>7</sup>

### INCREASED ATTENDANCE & TEST SCORES

Children need experiences that support school performance, including their attendance and test scores.

- ✓ Participating in Camp Invention during the summer has increased students' performance and engagement the following school year.<sup>7</sup>
- ✓ Camp Invention contributes to better attendance, GPA and test scores — three key steps to ensuring a child takes a college path.<sup>7</sup>
- ✓ Following one Camp Invention program, 56% of students with high-risk absence rates demonstrated excellent attendance, and students' average and median standardized test scores rose in reading and math.<sup>8</sup>
- ✓ Our education programs improve children's social-emotional learning outcomes. Participants gain an improved sense of belonging, college-going identity, future sense of self, and motivation and confidence for academic success in school.<sup>9</sup>
- ✓ Camp Invention participants had higher average and median percentile scores in reading and math compared to district scores.<sup>10</sup>



4. ChangeMaker Consulting LLC, Camp Invention Evaluation Executive Summary (2014).

5. J.K. Garner and M. Kuhn, Impacts of Facilitating Invention Education on Teachers' School Year Practices, A Technical Report Prepared for Camp Invention. The Center for Educational Partnerships, Old Dominion University (January 2022).

6. J. Falk, Camp Invention Evaluation Report. Institute for Learning Innovation (2018).

7. Summit Education Initiative, National Inventors Hall of Fame Camp Invention Summer 2019 (December 2019).

8. Summit Education Initiative, National Inventors Hall of Fame Camp Invention Summer 2018 (December 2018).

9. Summit Education Initiative, National Inventors Hall of Fame Club Invention Youth View Survey Report Fall 2021 (February 2022).

10. Summit Education Initiative, National Inventors Hall of Fame Camp Invention, a Program Component of Akron Public Schools Innovation 365 (I365): Wraparound Summer 2022 (January 2023).



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