

2025-2026

Battelle Teacher Academy Year 3 Report



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Executive Summary

The BTA is an immersive professional development program created by Battelle Education to address the growing STEM technical skills gap experienced by Maritime Industrial Base (MIB) employers. Recognizing the significant influence teachers have on student career paths, the BTA equips educators with manufacturing content and career information to advocate for students, helping to fill the demand for a highly skilled technical trade workforce that is essential for submarine construction.

Program Overview

For the 2025–2026 school year, Battelle Education leveraged its state and national STEM Networks to recruit an additional 37 elementary, middle, and high school teachers from Ohio and Michigan to participate in a year-long cohort.

Program Activities

The 2025–2026 BTA program included:



Multi-day professional development for participants to gain familiarity with MIB manufacturing industries



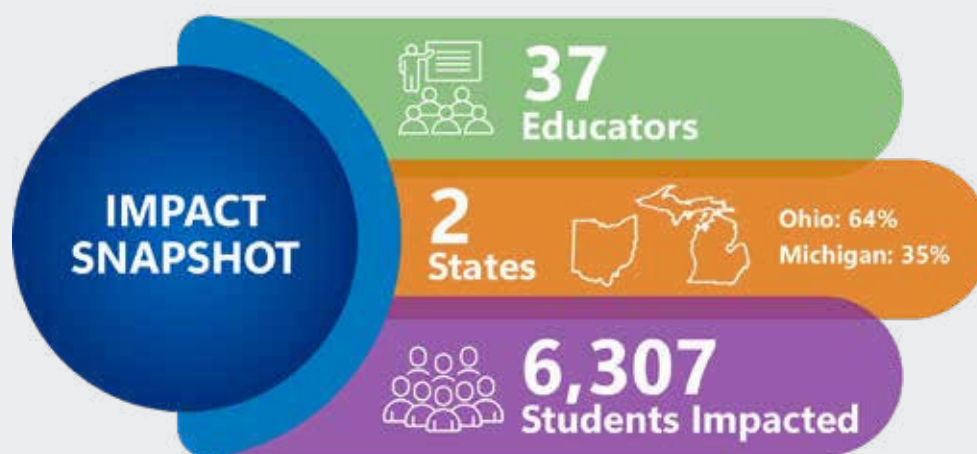
Externships with an industry partner to learn about careers critical to addressing skilled labor shortages



Coaching to develop authentic problem-based learning (PBL) units and lessons for their students, based on the industry skills and jobs they observed



The BTA program underwent a 2-year external evaluation by ICF. To assess teacher outcomes, ICF used pre- and post- surveys and interviews.



Participants represented a diverse range of grade levels, with 37% teaching middle school, 37% teaching high school, and 26% teaching elementary grades, demonstrating strong representation across the K–12 continuum. **The majority of participants (74%) teach in middle and high school settings, where exposure to career pathways and workforce-connected learning is most critical for student decision-making.**

Program Details

For the 2025–2026 school year, surveys were administered before the Year 3 kickoff and after its final event. A total of 31 teachers completed both surveys, and their responses formed the basis of the evaluation findings. Additionally, teacher participants were asked open-ended questions to gather insights into their experiences and perceptions of the program.

The program has since begun its fourth year of implementation (the 2026–2027 school year), expanding from Michigan and Ohio to include California and South Carolina.

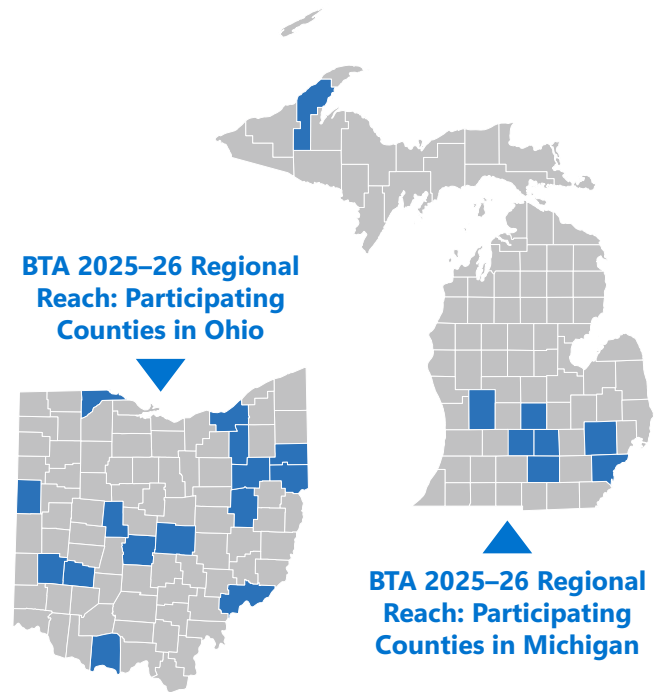
Activity	Timeframe
Program Kick-off	June 2025
Externship Experience	Summer–Fall 2025
Virtual Support Sessions	Ongoing 2025–2026
Final Convening and Presentations	March–April 2026

Regional Workforce Impact

The BTA program reached across 24 counties—16 in Ohio and 8 in Michigan—creating a broad regional impact for manufacturing workforce development.

Through the educator participants, the program introduced 6,307 students to manufacturing career opportunities, establishing a comprehensive pipeline that introduces manufacturing pathways across entire regions and strengthens the future workforce throughout the Midwest manufacturing corridor.

By equipping teachers with manufacturing content and career information, the BTA enables these educators to become even more effective advocates for their students—helping fill the high-skilled technical trade workforce needed to build submarines. This ongoing support encourages industry–classroom connections and exposes students to vital industry skills and career opportunities.



Ongoing Technical Assistance and Supports (2025–2026)

Throughout the 2025–2026 program, participants engaged in a structured series of ongoing supports designed to ensure successful classroom implementation and sustained impact. These supports included:

Monthly Community of Practice (CoP) sessions to build capacity and collaboration	Individual coaching and feedback cycles to refine PBL implementation	Industry externships to deepen real-world understanding	Cross-state collaboration opportunities to expand perspective and best practices	A final convening to showcase classroom impact and educator learning
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This layered approach ensured educators received both group-based learning and individualized support, resulting in stronger instructional outcomes and deeper integration of workforce-connected learning.

Activity	Timeframe	Delivery Complexity
CoP Sessions	Monthly facilitation	Separately by state
Coaching	1:1 sessions throughout 2025-2026 school year	Individualized, high touch
Externships	Industry placements during Summer–Fall 2025	Customized per participant
Two Virtual Conferences	Month Year and Month Year” for the two conferences	Multi-state coordination

Impact Data

The 2025–2026 BTA cohort demonstrated significant growth across all measured areas. Participants showed substantial increases in manufacturing knowledge, instructional confidence, and career pathway awareness. Across nearly all measures, educators shifted from low baseline ratings to high levels of confidence and understanding, reinforcing the Academy’s effectiveness in preparing teachers to deliver workforce-connected learning experiences.



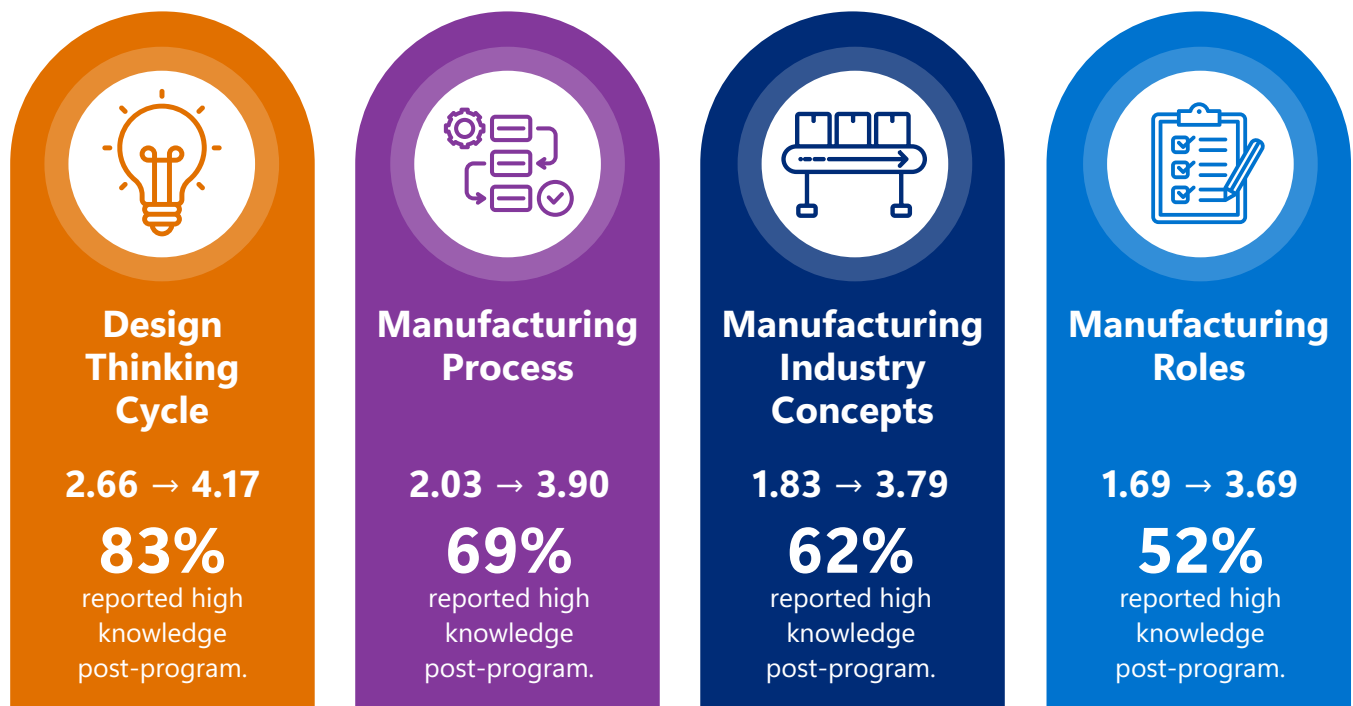
Project Details

For the 2025–2026 school year, surveys were administered before the program kickoff and after the final convening. A total of 31 teachers completed both surveys, and their responses form the basis of the Year 3 evaluation findings. Participants represented Ohio (64%) and Michigan (35%), spanning elementary, middle, and high school grade levels. Through their classroom implementation, teachers impacted approximately 6,307 students, extending workforce-connected learning across both states.



Knowledge Gains

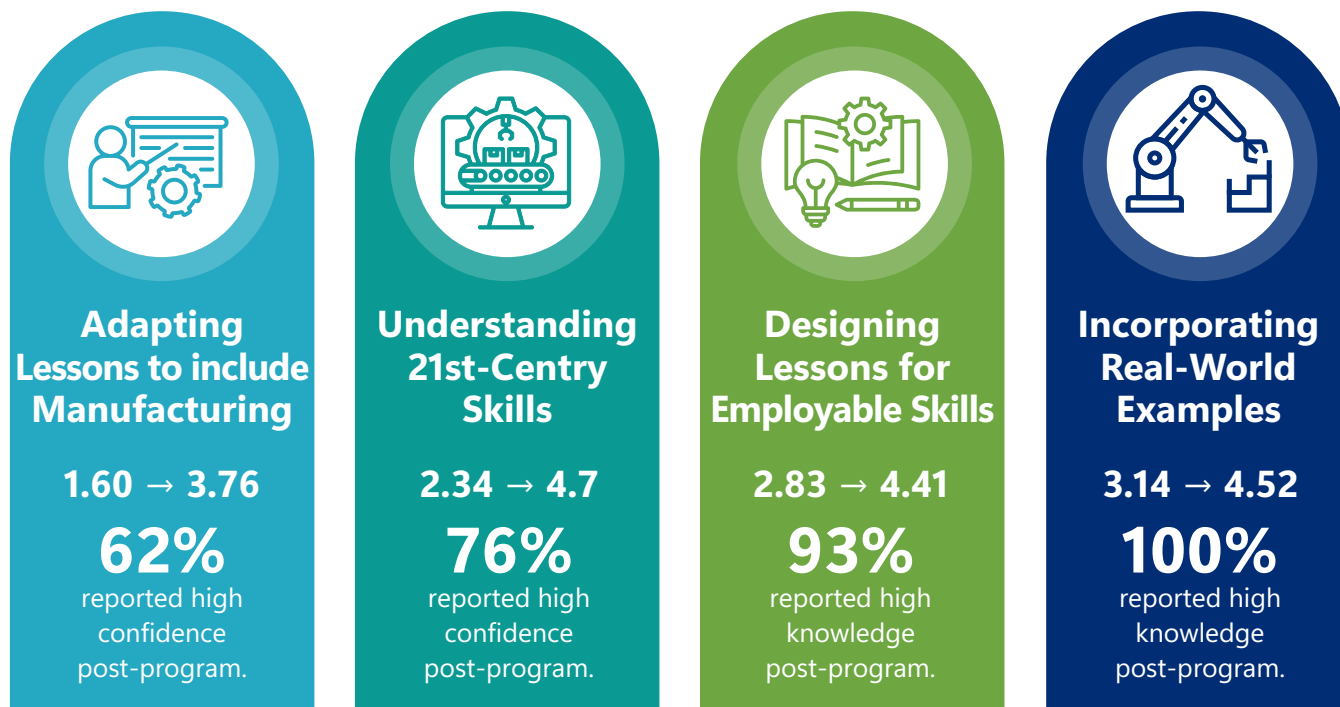
BTA participants demonstrated substantial growth across all measured knowledge areas, with the most significant gains in foundational manufacturing concepts.



These substantial gains demonstrate the program’s continued success in building educator knowledge of manufacturing systems, processes, and workforce roles essential to supporting the MIB.

Building Educator Confidence for Workforce-Connected Instruction

The program significantly strengthened participants' confidence in applying workforce-relevant instructional practices.

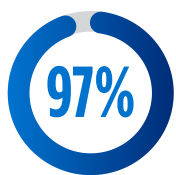


Most notably, 100% of participants reported high confidence in incorporating real-world examples into instruction, demonstrating a strong shift toward applied, workforce-connected teaching.

Improving Perceptions of Manufacturing

Participants showed significant shifts in perception of manufacturing and its relevance.

Manufacturing as Important to Local Economy:
3.17 → 4.69



agree/strongly agree post-program.

Perception of Industry Growth:
2.45 → 3.52



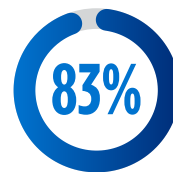
agree/strongly agree post-program.

Educators demonstrated a stronger understanding of the importance of manufacturing within their local economies, along with increased awareness of workforce needs and opportunities.

Career Pathway Awareness

Participants showed dramatic increases in understanding connections between classroom learning and career pathways:

Awareness of Manufacturing Career Connections
2.00 → 4.17



agree/strongly agree post-program.

Educators shifted from limited awareness to strong understanding of how classroom content connects to manufacturing careers, positioning them to better guide students toward maritime/submarine workforce pathways.

Program Impact

(Student Outcomes)

Survey results indicate strong classroom-level impact:

- Students impacted: 6,307
- Increased student engagement in STEM and PBL (qualitative trend)
- Increased awareness of real-world careers and industry applications



Qualitative Insights - Most Valuable Aspects

- Industry exposure and site visits
- Collaboration with peers
- Coaching and individualized support
- Direct connections to workforce needs



Classroom Innovation in Action

Students designed and tested solutions for real-world problems using engineering and data analysis.

- Students combined literacy and engineering by building models and writing technical manuals.
- Students acted as engineering consultants, applying math and design to optimize real-world systems.
- Elementary students engaged in design thinking through hands-on model creation and industry interaction.



Participant Voices

"I now see how my PBLs can be more purposeful—not just projects, but meaningful learning connected to real careers."

"Students were able to connect classroom content to real careers, making learning more relevant and engaging."

Program Expansion and Growth

The 2025–2026 implementation year marked a significant expansion of the BTA. While continuing strong implementation in Ohio and Michigan, the program laid the foundation for growth into additional states, including California and South Carolina.

This expansion reflects a transition from a regional initiative to a scalable national workforce development model, increasing access to industry-connected learning and preparing more educators to support high-demand career pathways.

Through the Battelle Teacher Academy, students explored submarine industrial base careers by engaging in hands-on projects tied to advanced manufacturing, skilled trades, systems engineering, technical communication, logistics, and real-world problem solving.

Student activities during program	Skills students explored	Submarine Industrial Base careers students explored or connected to
• Makerspace tools, GE Aerospace, and CTC program connections • Slope/erosion project connected to Ohio Gratings and structural design • Veterans and military career interviews • FlexFactor challenge with Hybrid Flexible Electronics; AOMC, WSCO, BB2C • J-Lenco; molds, test and sand cores, casting, ceramics, design process • BuildSubmarines.com career fair, career assessments, "day in the life," budgeting, silent problem, build-a-sub challenge • Project E.D.E.N.; systems of submarines, maritime industrial base, naval vessels • KTSDI; heavy-load transport, hydraulic/mechanical/electronic control systems, shipbuilding and modular transporters • Quincy Mine and Hoist House; copper mining sources, artifacts, process/manufacturing language • Extreme environments, homeostasis, UAW Local 396 plumbers/pipefitters/steamfitters/HVAC, Humtown Additives field trip	• Research, collaboration, design, problem solving, troubleshooting, use of makerspace tools/materials, time management • Measurement, slope, erosion modeling, visual modeling, collaboration, explanation, product/structure analysis • Interviewing, storytelling, communication, empathy, career awareness, understanding transferable military skills • Advanced manufacturing awareness, entrepreneurship, product design, marketing, presentation skills, technical problem solving, use of sensors/mechanical arms • Mold-making, casting concepts, design process, planning, experimentation, visual journaling, collaboration, failure/iteration • Career exploration, buoyancy, design/revision, budgeting, salary research, problem solving, creative writing, supply chain thinking • Systems thinking, testing, revising, component design, engineering practices, collaboration, student ownership, iteration • Technical writing, user manuals, robotics, CAD/Fusion-style tools, simple machines, soft skills, engineering mindset • Place-based research, primary/secondary source analysis, process thinking, manufacturing vocabulary, cross-content science/social studies connections • Structure-function reasoning, pressure/stress/environmental extremes, anatomy-engineering connections, skilled trades awareness, Q&A with professionals	• Engineering technician, manufacturing technician, product designer, machinist/CNC pathway, additive manufacturing support, skilled trades connected to fabrication and prototyping • Structural designer, manufacturing technician, civil/structural engineering technician, fabrication roles, quality/safety roles connected to drainage and load design • Welder, mechanic, electrician, logistics driver, vehicle/tank maintenance, military-to-manufacturing career pathways • Manufacturing technician, electronics technician, welder, machinist, product designer, automation/mechatronics technician • Patternmaker, mold maker, foundry/casting technician, machinist, manufacturing technician, materials/process technician, quality control technician • Welder, shipbuilder, pipefitter, electrician, machinist, engineer, supply chain/logistics specialist, submarine manufacturing technician • Systems engineer, naval engineer, maritime technician, mechanical/electrical systems technician, integration/test technician, design engineer • Technical writer, CAD designer, robotics technician, hydraulic/mechanical systems technician, controls technician, heavy-load transport technician, shipbuilding support roles • Materials processing technician, heavy equipment operator, industrial maintenance technician, hoist/rigging operations, manufacturing process technician • Pipefitter, plumber, steamfitter, HVAC/refrigeration technician, additive manufacturing technician, skilled trades instructor, engineering/design roles for extreme environments

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