



**MiSTEM:
Collaboratives**



Measuring Success: Instrument Design for Teacher Impact

Background

The MiSTEM Advisory Council recommended that three collaboratives known as the MiSTEM: Collaboratives be funded to execute and expand the Statewide STEM Strategy in order to (a) elevate mathematics, (b) ensure students have science and engineering literacy, and (c) expand access and highlight the importance of computer science. Each collaborative receives funds annually to develop and implement a four-year strategic plan that includes facilitating the integration of innovative 3P (Project-, Problem-, and Place-Based) instruction opportunities in STEM learning.

Problem

Teachers engage in professional development programs and sessions offered by the three MiSTEM: Collaboratives. Past evaluations have quantified what types of programs were offered and how many teachers attended, but did not look at the impact these professional development programs had on their instructional practices regarding 3P, teaching self-efficacy, and STEM career knowledge. The MiSTEM: Collaboratives aimed to move beyond attendance metrics to understand the true impact of their professional development programs.

Solution

Everett Evaluation partnered with the Science and Mathematics Program Improvement (SAMPI) at Western Michigan University, leveraging existing tools within the MiSTEM network. We revised the survey tool to meet the specific evaluation needs of the MiSTEM: Collaboratives. The survey was distributed to teachers who participated in professional development programs.

Outcome

Three hundred and two teachers responded to the survey. Using this pilot data, Everett Evaluation will conduct reliability and validity analyses to refine the tool. The refined survey will be administered annually as a pre- and post-assessment to measure gains in 3P knowledge, STEM self-efficacy, and STEM career awareness. By partnering with Everett Evaluation, the MiSTEM: Collaboratives gained a robust evaluation tool that will track the long-term impact of their initiatives. This data-driven approach ensures continuous improvement and supports the strategic goals of enhancing STEM education across Michigan.