The Innovative Technology Experiences for Students and Teachers (ITEST) program was established by the National Science Foundation (NSF) to help ensure the breadth and depth of the Science, Technology, Engineering, and Mathematics (STEM) workforce, in direct response to concerns and projections about the growing demand for and current shortages of STEM professionals in the U.S.

The STEM Learning and Research (STELAR) Center at Education Development Center, Inc., in partnership with the Goodman Research Group, Inc., assists ITEST principal investigators (PIs) and evaluators to design, refine, and evaluate their ITEST projects and to effectively synthesize and disseminate project findings.

These periodic Data Briefs explore results reported by ITEST project leaders in the Management Information System (MIS), which collects information each year from all active ITEST projects about what the projects do, whom they serve, and their successes and challenges.

For more information, questions, or comments: http://stelar.edc.org
stelar@edc.org

Research Methods in ITEST

The ITEST program requires that all proposals include a research component. This data brief examines the 63 projects that described their research between September 1, 2014 and August 31, 2015 as reported in the 2015 Management Information System (MIS) survey.

What kinds of study designs do projects use?

45 out of 63 projects reported using both qualitative and quantitative study designs to measure their project's outcomes.

26% of projects used comparison groups

66% of projects used pre- and post-tests

Which tools do projects use to measure outcomes?

ITEST projects use a multitude of tools to capture data from their participants. More than 66% of reporting projects used at least 3 tools to collect data from youth and educators.

<table>
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<th>Percentage of projects utilizing the four most commonly reported data collection methods.</th>
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<td><strong>Embedded or performance-based assessments</strong></td>
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<td>Youth</td>
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<td>53%</td>
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Research Methods in ITEST

What kinds of instruments do projects use?
The innovative nature of ITEST projects present a challenge in finding an appropriate evaluation instrument, leading many projects to modify externally developed instruments, internally develop instruments, or use a combination of both.

- **71%** use externally developed & validated instruments
- **51%** modify externally developed and validated instruments to fit specific project needs
- **18%** use both externally and internally developed and validated instruments
- **11%** use only internally validated instruments

Visit the resources section of the STELAR site to view evaluation instruments used by ITEST projects

What data do projects intend to collect from participants after funding is over?

More than 1/3 of projects plan to follow up with participants after the official grant funding period has ended.

- **14%** plan to follow up with teachers regarding their use of knowledge and materials
- **59%** plan to collect data from youth participants, including subsequent academic and/or career choices

How do ITEST projects describe their key findings?

Most projects cited gains in student interest and STEM/ICT content knowledge.

Projects also found that professional development had a positive impact on teacher confidence in STEM subject areas.

Teacher content knowledge was associated with student impacts.