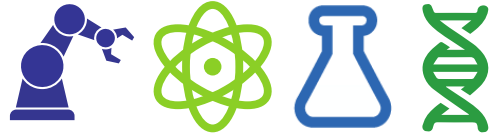


Science

ASSESSMENT PRACTICES



How are surveys an essential part of a science assessment system?

Science education is more than learning content and skills. Part of success includes supporting students in seeing themselves as capable in doing science and in appreciating the importance of science for the world around us.

What are the opportunities and challenges?

Surveys provide an opportunity to better understand students and build relationships with them. It supports better connections to their identities and interests.

Challenge: surveys take time to develop, administer, and evaluate. A bigger challenge is using survey data, as part of a larger system, to make changes to programs and instructional practices.

How does this connect to a vision for equity?

It's essential to know more about student sub-groups than their test scores – does the current program support all students in identifying as capable in science and as prepared for their next steps in learning?

Why it Matters

Administrators:

Particularly at late elementary and early middle school, students start to decide that they are or are not “science people.” It is critical to enable staff to reflect on and respond to data on student attitudes and how that shifts over time.

Part of leading effective decision making is including all voices, including students.

A hypothesis (or “theory”) of action is: If students feel more capable and connected in science, test scores will increase.

Teachers:

Surveys provide important information on whether instruction is having the desired outcomes for all students in relation to your goals and vision.

Surveys can be part of [an effective SLO process](#).

Students, Families, and Communities:

Surveys can support educators in being more responsive to student voice and needs.



What are some strategies for implementation?

- Develop, find, or adapt a student survey based on your local vision and goals.
- Determine a plan for disaggregating and analyzing survey results on their own and in combination with other assessments.
- Consider the time and location of pre and post surveys. Would a mid-year check-in be useful as well?
- Determine who will be responsible for survey development and analysis, and when science department educators (and other colleagues as relevant) will dig into results *and determine next steps*.
- Administrators could also consider how they will survey teachers and community members on their perceptions of the school or district science program.

What are some good reflection questions to consider?

- 1) What parts of our vision for student learning are best evaluated with a survey?
- 2) Do we have the expertise to develop an effective survey, or should we get outside help or use an existing instrument?
- 3) What different modalities can we use to understand our students' attitudes and beliefs?

What do national professional groups or education researchers say on this topic?

- [Edutopia article on student surveys](#)
- [DPI Science blog post on surveys](#)
- [STEM Teaching Tool](#) – getting feedback from students

Further Resources

Administrators:

- Several example student surveys are on [this website from Pearson](#)
- [Survey on student attitudes toward science and other STEM subjects](#) (download link) - this paper describes use and development of the survey, with the actual tool at the end.
- [Changes in Attitudes about the Relevance of Science \(CARS\)](#) – the three versions of the instrument could be given at the beginning, middle, and end of a school year.
- [Test of Science Related Attitudes \(TOSRA\)](#) – see final pages for items and scoring information.

Teachers:

- [Sample survey](#), Edutopia
- [Ongoing exit ticket ideas](#)
- [Supporting student self-efficacy](#)

Students, Families, and Communities:

- Don't hesitate to email or [talk to the teacher](#) about how the science class is going and hopes for science learning in general.

For more information contact:

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June 2021 Wisconsin Department of Public Instruction

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