

Research

Teaching 21st Century Skills Requires New Assessments

A new report from the Brookings Institution finds technology will play an integral part of assessing the ability of students to grasp 21st century skills.

- By Sara Friedman
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As schools invest more time teaching students critical thinking skills, the need to invest in technology to enable measurement of teaching methods will become increasingly important, according to [a report](#) from the [Brookings Institution](#). The report examines how 21st century skills are becoming a central part of teaching in countries around the world and how to address assessment needs.

"When the skills are complex, it is important to know the process of how you came up with an answer especially when the skills output is not easily defined," said Alvin Vista, a fellow for the Center of Universal Education at Brookings. "The process of coming up with the creative output is more important than the technology itself. Technology allows you capture other stuff like processes. All of the background data can be captured using technology. It gives the assessment investigators more data to work with."

These skills involve critical thinking, creativity, problem solving, communication and socio-economic skills. There are assessments already in existence such as the [SimScientists](#) program, which uses simulations to assess science learning.

"Because 21st century skills are comparatively more complex, non-routine and dynamic, the measurement process needs to take into account their application in real-life and non-familiar situations," the report noted.

Challenges can arise when it comes to assessment design owing to how these skills are interrelated and complex. Since the skills are also generic and transferable, problems also arise when it comes to adding "domain-specific knowledge."

Validating the assessments can also prove difficult owing to the various interpretations involved in the measurement process. "Establishing construct validity — how well the assessment measures what it is intended to measure — is challenging when working with complex constructs, with no clear operational definitions of the skills. A related challenge is in establishing the set of standards which can be accepted as evidence for whatever inferences we make related to the target construct," the report found.

Assessment can be used by teachers to solve several problems:

1. Locate students along a learning progression and identify gaps in achievement.
2. Adapt instructional practices to individual needs and information instructional improvement.
3. Track and communicate student progress.
4. Inform data-driven decision-making at classroom and school levels.

The full Brookings report can be found here.

About the Author

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