



## NATIONAL LEADERSHIP INSTITUTE'S TOOLKIT 2004 EVALUATING STUDENT ACHIEVEMENT

### Pros and Cons of Paths To 8<sup>th</sup> Grade Technology Literacy

No Child Left Behind Act of 2001 (NCLB) mandates that all students become technology literate by the end of eighth grade, but the law does not stipulate *what* that process must entail. Therefore, states are taking various approaches to addressing this expectation, and are creating different assessment requirements, as well as different definitions of what technology literacy means for their students. In some states, the technology literacy standards are embedded in the core content standards, while in other states, technology literacy standards are separate from the core content standards, and in some states there are no technology standards at all. Whether technology standards are embedded or separate can affect the type of assessments that are developed to meet NCLB's mandate.

The assessment for student technology literacy can be a separate test or it can be part of the core content assessments that students are already required to take. The nature of such assessments has large implications for such issues as time, cost and overall capability to measure particular aspects technology literacy. Some characteristics of, and pros and cons for separate and embedded assessments are outlined below.

#### Separate Technology Standards:

- Test for technology literacy only;
- Are independent of any other curricular content;
- Do not attempt to test for other curricular needs, just technology (e.g. a question that addresses a scenario in math, but is not meant to assess math knowledge); and
- Determine proficiency in 8th grade technology literacy *only*.

**Embedded Technology Standards:**

- Test both technology literacy and curricular knowledge simultaneously;
- Are integrated into other state curricular assessments; and
- Determine both proficiency in 8th grade technology literacy AND proficiency in content areas.

## Pros and Cons of Separate Versus Embedded Assessments

<i>Separate Assessment</i>		<i>Embedded Assessment</i>	
<i>Pros</i>	<i>Cons</i>	<i>Pros</i>	<i>Cons</i>
Lower cost.	Technology is seen as a separate area.	Highlights the need for technology to be integrated across the curriculum.	Higher cost.
Easier to revise test items based on relevance of standards (i.e. based on changes in technology over time).	It is harder to get separate assessment processes accepted/adopted.	More authentic.	Need to update core standards regularly to keep up with change in technology applications and tools
Shorter tests.	Creates the possibility that computers will be moved out of classrooms into a “monster classroom” for testing only.	Tests are not a separate time commitment.	Longer tests.
Validation process can be more focused and timely initially.		Testing sites/mechanisms are already in place.	Lack of comprehensiveness of the standards—technology literacy standards need to be fully represented in core curriculum standards.
Workable transitional strategy (i.e. in order to get to an embedded assessment, doing a separate assessment might be a good idea).		Embedded standards can be accepted without being viewed as outside the normal assessment process.	Development takes a lot more resources (human, financial, time) to coordinate and develop integrated tests.
Helps maintain a focus on the importance of using technology effectively to enhance instruction.		Students would see the connection between technology literacy and the core curriculum.	Getting buy-in from core content supporters can be a difficult process.
		Requires a great deal of buy-in from all stakeholders.	Must develop items that work for both curriculum and technology literacy.
			Determining which areas of the curriculum should be assessed.
			May lead to lack of focus on the initial goal of determining technology proficiency to meet the goals of NCLB.

## Types of Assessments\*

<i>Cognitive Assessments (Multiple-Choice, Constructed Response)</i>		<i>Performance-Based Assessment</i>		<i>Hybrid (Combination of cognitive and performance-based)</i>		<i>Portfolio</i>	
<i>Pros</i>	<i>Cons</i>	<i>Pros</i>	<i>Cons</i>	<i>Pros</i>	<i>Cons</i>	<i>Pros</i>	<i>Cons</i>
Low cost.	May not cover all appropriate skills or be comprehensive.	More Authentic.	More costly.	Broader coverage of standards (shows both understanding and ability).	Higher cost.	Highest Authenticity.	Most time intensive overall.
Easier to develop items.	No samples of student work (not authentic).	Clearer connection to standards.	Longer time to complete/ administer.	Clearer connection to standards.	Longer time to complete and administer.	Clearest connection of technology standards to curricular standards.	Cannot get instant overall feedback.
Validation easier and more transparent.	May not be a test of technology literacy (i.e. may be a test of reading comprehension).	Can be given online.	Demonstrates technology <i>use</i> , but not an <i>understanding</i> of how to apply technology skills.	Validation easier and more transparent.	Higher cost per item in terms of development.	Broadest coverage of technology literacy standards.	Hardest to maintain scoring reliability.
Ease of administration.	No way to demonstrate student can actually “do” what they are describing.	Instant feedback (if online).	Item development can be more costly.	Can be given online.	Higher level of technology capability needed to administer.	Less time intensive on a daily basis.	Storage of artifacts over time.
Instant feedback (if online).		Scoring can be automated.	Higher level of technology capability needed to administer.	Instant feedback (if online).		Can store artifacts easily.	No set definition of what a portfolio should contain.

<i>Cognitive Assessments (Multiple-Choice, Constructed Response)</i>		<i>Performance-Based Assessment</i>		<i>Hybrid (Combination of cognitive and performance-based)</i>		<i>Portfolio</i>	
Less time to complete test.		Validation easier and more transparent.	Takes more time to administer.	Automated scoring.			Uncertainty over who collects the artifacts
Computer adaptive tests are available.				Richer information is possible.			
Scoring can be automated.							
Appropriate for 8th Grade.		Appropriate for 8th Grade.		Appropriate for 8th Grade.		Appropriate for 8th Grade.	

**\*Note:** These lists are not exhaustive. They are a general overview of some important things to consider going through the process.

## Possible Decision Points for Choosing Various Types of Assessment

Cost	Cognitive ← <b>Lowest</b>	Performance	Hybrid	Portfolio → <b>Highest</b>
Time to Administer	Cognitive ← <b>Lowest</b>	Performance	Hybrid	Portfolio* → <b>Highest</b>
Time to Develop	Cognitive ← <b>Lowest</b>	Performance	Hybrid	Portfolio → <b>Highest</b>
Richness of Data	Cognitive ← <b>Lowest</b>	Performance	Hybrid	Portfolio → <b>Highest</b>

