

PERFORMANCE ASSESSMENT: ASSESSING KNOW-HOW AS WELL AS KNOW-WHAT

Prospectus

Context

If a student makes or repairs something—a window frame, a dance, a project report, a CAD drawing, a poem, or a gourmet meal—a teacher should be able to detail the skills that went into doing that work and assess the student on the whole product and performance as well as its component parts. A teacher might also know how much new learning occurred since the previous assessment occurred and how the student acquired that new learning. Such assessments *authenticate* for the student what she knows and *validates* for the teacher what the student knows **and** how she knows what she knows—not only the student’s know-what but know-how and even know-why.

Our basic premise is that the current assessment system disadvantages many young people who can demonstrate what they know by performing in authentic and challenging contexts. By establishing a system of authentic performance assessments, we hope to provide alternatives to the Carnegie Unit for students to demonstrate competence and gain access to postsecondary learning and high-wage work options that lead to a successful career and lifelong learning.

These students would also benefit from much broader and insightful assessments of student competence. Unfortunately, testing and assessment have dangerously narrowed the definition of success on at best a limited set of skills and at worst knowledge that is both narrow and at times false. Most traditional tests, for example, do not measure applied learning and 21st Century skills.¹ Moreover, as Baker points out, the evidential disconnect between test designs and learning research is no small thing and is manifested in the students who pass the test without having mastered the standards to which the test is addressed.²

Performance assessment employs a variety of methods for determining whether a student has attained sufficient mastery of essential knowledge, learning, and skills (intellectual, emotional, and social). Performance means just that, a performance, not just being tested on knowing what but also being assessed on knowing how. Typically, performance assessment employs student performances, portfolios, exhibits, and projects that document and demonstrate applications of learning in real-world contexts over-time. Well-constructed performance assessments can be extremely useful for measuring student growth and guiding future learning. Despite their value, few schools use them; even fewer use them well.

The Work We Propose To Do

For over ten years, Big Picture Learning (BPL) schools throughout the country have been using projects, performances, narratives, and portfolios as demonstrations and documentation of student learning and work. We have and continue to focus on individualized student learning with an emphasis on

¹ See, for example, Levy, F., & Murnane, R. J. (2004). *The new division of labor: How computers are creating the next job market*. Princeton, NJ: Princeton University Press; Partnership for 21st Century Skills. (2006, March). *Results that matter: 21st century skills and high school reform*. Tucson, AZ: Author.

² Baker, E. (2007). The end(s) of testing. AERA Presidential address.

demonstrating proficiency and understanding in meaningful contexts. We have developed a comprehensive web-based system to document and share these assessments. We are working on the redesign of systems in states and school to bring in real-world components into performance assessments. At The Met in Providence, we are developing systematic ways of assessing proficiency through a portfolio of assessment methods, including performance assessment. In California, Big Picture has included performance assessments in addressing the A-G requirements.

BPL proposes to produce meaningful performance assessments embedded in and/or directly associated with contextual, real-world integrated units that far surpass the depth of current assessments. These performance assessments will effectively measure depth of student understanding of essential knowledge and skills in a way that promotes student interest and formal connections to the real world. We propose to start our work on performance assessment in two areas: mathematics/quantitative reasoning and science/empirical reasoning. We will align and connect this work with our initiatives in certifications and longitudinal assessment.

Big Picture will create protocols for developing and using performance assessments as formative (i.e., as part of day-to-day student learning and practice) and as summative (i.e., as end of module, project, course, and program) evaluations of student performance. We will also produce a diverse set of exemplars with guides for students, mentors, teachers, and administrators of both in and out of school organizations. Finally, we will develop and implement a comprehensive education, training, and support system for teachers and principals. These products will provide an alternative to the Carnegie Unit system, which employs specific content and time as constants in measuring performance while allowing performance to vary, and will complement the current paper-and-pencil testing program. Our system will take a “retail” approach to the “wholesale” testing enterprise by providing cost-effective ways of developing deep understandings and validations of students’ capabilities and how they progress to mastery over time.

Goals and Objectives

Our goal is to develop and disseminate a diverse set of performance assessments and a process for creating them. To successfully develop these products, we will:

1. Develop 2-3 pilot units/modules integrating appropriate content into real-world learning experiences (embedded assessment – initial focus on 9th grade students). These initial pilot units will address quantitative and empirical reasoning and literacy, thereby bringing strengthened academics to what the students find highly relevant. .
2. Create benchmark and summative performance assessments to coincide with each unit/module (integration of concepts/skills).
3. Integrate the assessment of William Sedlacek’s non-cognitive variables with other student assessments.³
4. Develop a limited number of content-integrated, stand-alone performance assessments that require transfer of concepts/skills embedded in pilot modules/units.

³ See Sedlacek, W. E. (2004). *Beyond the big test: Noncognitive assessment in higher education*. San Francisco: Jossey-Bass, Sedlacek, W. E. (2005). The case for noncognitive measures. In W. Camara and E. Kimmel (Eds.). *Choosing students: Higher education admission tools for the 21st century*. (pp. 177-193) Mahwah, NJ: Lawrence Erlbaum, Sedlacek, W. E., Benjamin, E., Schlosser, L. Z., & Sheu, H. B. (2007). Mentoring in academia: Considerations for diverse populations. In T. D. Allen & L. T. Eby (Eds.), *The Blackwell handbook of mentoring: A multiple perspectives approach* (pp. 259-280). Malden, MA: Blackwell.

5. Identify and work with a small number of representative pilot/test sites.
6. Team with evaluation experts to gather, analyze, and display student data to efficiently and accurately represent findings as well as improve upon our initial work.

Major Tasks

To accomplish these objectives, BPL will:

Develop prototypes. We have a number of ideas that are in varying stages of development. For example, we have done considerable design work on a project dealing with designing and building a prosthetic hand. We have also developed preliminary designs for projects dealing with DNA sequencing to determine human migration history and with urban agriculture. We will establish a partnership with CRESST in order to ensure high quality prototype development. CRESST has done considerable work on performance assessments, and is eager to work with us in applying their technical skills and understandings to our practice-based contexts and settings.

We will establish strong partnerships with schools, businesses, and community colleges in identifying essential proficiencies and the performances needed to demonstrate proficiency and mastery. We will also work with the business sector in developing the prototype assessments. Our preliminary work in this area has led us to believe that businesses are strong advocates for this kind of assessment, both as an integral part of learning and as a summative assessment of proficiency.

Create tools and materials. These protocols, exemplars, and teacher, mentor, and student guides will support the development and use of these assessments. We choose to use as science content highly engaging and motivating topics drawn from, and appealing to, students' interests as they engage the world. Moreover, we wish to blend attention to STEM skills with more general 21st Century skills and traditional academics through a rigorous and engaging curriculum.

Develop a professional development system. We will develop a comprehensive education, training, and support system to prepare teachers to develop and use performance assessments. This will largely consist of familiarizing Big Picture advisors who come to assist their students at portal work of the similarities and differences from other approaches in student-centered, project-based learning. Ideally, the collaborative ideas, technology, "portal" methodology, travel and virtual workshops, and teaming will combine in such a way to induce an initial spark of excitement along the lines of each student's own interests.

Develop an online dissemination program. BPL will support the serious examination of these assessments leading to a decision to adopt the new assessments and to support a user community.

Resources Required

We estimate that this development process will take two years to proceed from prototyping through pilot testing, with an additional year for extensive field-testing in Big Picture Schools and in selected schools from among the various school development organizations participating in the AHSI network.

This work will require a full-time certification development specialist, a full-time performance assessment specialist, and a full-time technical expert (CRESST) serving as a consultant to the project. Additional

resources will be required for supporting prototype work, convening a panel of technical experts, travel, and other support costs. We estimate that all three years of work will require about \$1.2 million.

Benefits

Systems of certificates based on authentic performance demonstrations can flourish within alternative schools as well as within alternatives to traditional schools and schooling. These certificates will enable students to pursue multiple career pathways and options within those pathways that lead to multiple career and life options. Moreover, such a credentialing system will provide young people with lots of options and with the agility and nimbleness to learn new work as the economy changes.