Assessing Project-Based Learning

Assessment is a critical component of any learning experience. Because Project-based Learning is a student-centered activity, formative and summative assessments are essential to successful learning. Assessments of Project-based Learning often focus much of their attention on the product of the learning experience. But the Project-based Learning process also offers opportunities to include embedded assessments that should not be overlooked.

There are as many assessment types as there are learning experiences in the PBL model. But “authentic” and “performance-based” assessments are particularly important because they are so well suited to the authentic, performance-based focus of PBL activities. Rubrics play an important role in PBL because they make the expectations for both student and teacher clear and explicit. Technology also plays a powerful role in PBL assessment because it can make the process more efficient, effective and creative.

Assessment is a process or system of gathering data or evidence of learning that can be used to inform decisions or actions about a student’s or students’ educational program (National Forum on Assessment, 1995; Simon, 1993; Salvia & Ysseldyke, 1988). Evidence can be gathered in many ways, but there are three general methods: asking, observing and reviewing products. The gathered evidence is then compared to a criterion or standard. There are two generally acknowledged purposes of assessment: formative assessment is intended to provide feedback to help students improve their learning; summative assessment is designed to evaluate achievement.

One of the defining features of PBL is that it offers students an opportunity to engage in authentic, real-world exploration, analysis, and problem solving. Assessing PBL experiences also typically involves what is called authentic or performance assessment. Authentic assessments typically (a) mirror the challenges, work, and standards engaging practicing professionals; and (b) involve the individual interactively through opportunities for explanation, dialogue, and inquiry through questions and responses (Grant Wiggins, 1989). Performance assessment includes a “variety of tasks and situations in which students are given opportunities to demonstrate their understanding and to thoughtfully apply knowledge, skills, and habits of mind in a variety of contexts” (Marzano, Pickering, and McTighe, 1993, p. 13).

Learning standards, whether national, state, or local, are descriptions of what students are expected to know and be able to do. Both formative and summative assessments are focused on measuring whether students have acquired the knowledge, skills, and dispositions described in those standards. During the lesson-planning process, it is important to identify in the PBL activity the knowledge, skill, and disposition expectations for the students and to incorporate appropriate assessments as part of the plan.

Richard Stiggins (2001) provides a useful framework for organizing such multi-faceted assessment. Stiggins shows us how to match our assessment target with our assessment strategy. Assessment targets, or the objectives or goals of the project, are categorized as Knowledge, Reasoning Proficiency, Performance Skills, Ability to Create Products, and Dispositions. Assessment strategies are categorized as Selected Response, Essay (constructed response), Performance Assessment, and Personal Communication (p 93). Particular assessment strategies are suited to particular assessment targets. For example, Performance Assessment is the best strategy for assessing PBL activities where students actually create a product. Selected Response may gauge prerequisite knowledge and Essay may result in a description of the product and its development, but neither directly assess the creation of the product. If cooperation is an expected disposition, Essay or Personal Communication will certainly help the student reflect, but Observation during the performance
assessment and jointly produced artifacts may be the most direct ways to gauge teamwork. All of these components of assessment can be used for both formative and summative assessment of the process and products of PBL.

Among the most-used assessment tools in PBL are rubrics. Rubrics are the “guidelines, rules, or principles by which student responses, products, or performances are judged” (Judith Arter, 2000, p. 1). Typically, rubrics contain criteria statements and a scoring scale or continuum. A rubric or project guide helps make expectations explicit for student, teacher, parents, and others. They permit more focused feedback on the part of the teacher and more effective self-assessment by the student. Rubrics can be used with many different assessment strategies such as projects, products, surveys, presentations, conferences, observations, and essays.

Rubrics are typically developed during the planning phase for a project and shared with students. Rubrics can be developed for products, such as brochures, skills, such as researching a topic, or dispositions, such as cooperation and teamwork. Typically, the steps involved in creating a rubric include defining the desired product or skill and its component sections or attributes, clearly defining those sections or attributes as criteria in the rubric, beta testing the rubric by having someone review it or by applying it to a practice activity, and making the rubric public for students, teachers, parents, and anyone involved with the project. It can help to start by examining sample rubrics and sample projects. Many times, students participate in the development of the rubric and the rubric is shared at the beginning of the project so teachers can use it for feedback and students can use it to guide and self-assess their project. Descriptions of how to build a rubric and collections of sample rubrics can be found in the Resources section at the end of this chapter.

Opportunities for both formative and summative assessment can be enhanced with the uses of appropriate technologies. Using appropriate technologies can help assess PBL more efficiently, effectively and creatively.

Teachers can assess student work more efficiently by exchanging, reviewing, and commenting on student work in electronic formats and providing rapid feedback by making student work available for self and peer review in electronic format. Students can work more efficiently by creating, storing, and revising drafts using word processors and other editing software. Teachers and students can accomplish assessment tasks more effectively by using electronic portfolios of multi-media materials focused on authentic tasks and by inviting parents and subject-matter experts to participate in the assessment process. Students can gather primary source data from the Internet and create multi-media presentations and present them to real-world audiences. More creative assessments for both formative and summative purposes can be encouraged by using technology that empowers students to envision, simulate, and build products and presentations with real-world applications, enabling teachers to create authentic assessment environments to test and evaluate them.
For more information, visit these sites:

**Overview of Rubrics**

http://www.elm.maine.edu/development/tools/rsgpd.stm

http://www.middleweb.com/rubricsHG.html

**Rubric for Rubrics and Project Based Learning**


http://arc.missouri.edu/pa/olive.html

**How to Develop a Rubric**

http://www.rubrics.com/4DACTION/W_ShowMemberArticle/1]2

http://intranet.cps.k12.il.us/Assessments/Ideas_and_Rubrics/Create_Rubric/create_rubric.html

**Electronic Rubric Generator**

http://205.213.162.11/stairs_site/workshop_pages/rubric_generators/rubric_generators.html

**Rubric Collections**

http://school.discovery.com/schrockguide/assess.html - rubrics

http://intranet.cps.k12.il.us/Assessments/Ideas_and_Rubrics/Rubric_Bank/rubric_bank.html