Opening Up Assessment

From students’ projects, portfolios, and interviews, Pittsburgh art teachers participating in ARTS PROPEL are learning to “read” students’ growth in learning from beginning ideas to final products.

It’s a Friday. It could be December or late June, one of those seasons when everyone is stalking a letter of reference, when nominations come due, when someone somewhere has to take responsibility for figuring out what students have learned. Your desk has the look of a miniature Manhattan, stacks of folders everywhere containing all the data you can call on: test scores, grades, maybe a few samples of students’ finished work, an occasional teacher report or year-end comment. You can add or average what you find there, or you can go with your intuitions; but either way, you have to seal the letter, write down a name, or decide what you think happened in Advanced Physics or New Voices in American Literature. Even so, as you head across the parking lot, questions buzz in the twilight:

- “What do I really know about students’ ability to pose interesting questions or to solve problems outside the comforting, maybe all-too-familiar structure of school assignments?”
- “Do I have any way of knowing if students have a hold on the kinds of thinking processes it takes to sustain long-term, serious work?”
- “What, in all I looked at, tells me whether a student has the wherewithal to step back and reflect on his or her own work?”

What Do We Really Know About Students?

These questions are tough. Even under the best of circumstances, they involve inquiry, inference, and professional judgment. But that is not all that makes them difficult to answer. The real difficulty is that few schools can furnish the kinds of information that would permit an educator to see—never mind to assess—these essential qualities. We simply don’t ask students
When a student puts herself into her work, it is limiting and unfair to assess her intellectual growth with paper-and-pencil tests—we need to look at the work.
"Asked to reflect on her own work in much the same way she might be asked to think about poems by W. B. Yeats or Emily Dickinson, Connie noticed—for the first time—that she had a style, a characteristic signature, as a writer."

to keep track of their questions and ideas. We argue there is too little time to look at the way students' work develops from idea to draft to finished project. We rarely pause to ask students to appraise their own work, so how could we know much about their self-knowledge or their critical faculties? Moreover, even if rich and detailed information were available, few educators would know how to make sense of journals, drafts, or interviews. After all, how many of us have had the training, the opportunities, the colleagues to help us consider what might be learned from these kinds of qualitative materials?

The lack of powerful qualitative information about student learning, thoughtful ways of using that information, and training for educators in this kind of assessment is a major gap in the way American educators go about indexing and studying student learning. The grades, test scores, even the samples of student work, can't answer those questions because they are highly structured, product-oriented, and closed to students. Answers from the Arts

The idea that the arts might offer provocative answers to this problem probably strikes many people as unlikely at best. Many educators think of the arts as a backwater or a sideline to "serious learning." Only 14 states require credit in the arts for high school graduation. In many of those, the requirement can be fulfilled by taking an "industrial art" such as metal shop or typing. However, early in 1985 the Rockefeller Foundation decided that the arts and humanities might make a distinctive contribution to the growing debate over the quality of American education—precisely in the arena of assessment. The Rockefeller Foundation encouraged three institutions—Harvard Project Zero, Educational Testing Service, and the Pittsburgh Public Schools—to join in a multi-year effort to develop powerful versions of the qualitative modes of assessment that have informed the way fine teachers read essays, review student portfolios, or listen to rehearsals. Each of the three partners brings a unique contribution to the collaboration. Project Zero is a research institute at the Harvard Graduate School of Education where, for 20 years, researchers have joined artists and teachers in studying the way human beings learn to communicate using symbols. Researchers there have been particularly interested in studying the way children and adults use their symbolic skills for artistic purposes to make metaphors, to set down new musical ideas, to create paintings or dances (Gardner 1982, Winner 1982). Educational Testing Service brings not only a wealth of experience in testing and measurement but a growing interest in holistic and qualitative modes of assessment (Breland et al. 1987, Camp 1985). The Pittsburgh Schools contribute a diverse school population, a remarkable commitment to the continuing professional development of teachers, and an administrative staff willing to try novel forms of evaluating students' learning.

The project is built on the conviction that it is time to take a fresh look at what the arts teach and how art teachers examine what their students learn. Even though contradictory stereotypes persist, considerable research at Project Zero has demonstrated that the arts exercise not just hand and heart, but mind as well. This research points out that, like other demanding cognitive activities, the arts involve people in symbol-use, analysis, problem solving, and invention (Gardner 1973, 1982; Perkins 1981; Winner 1982). The writer who scratches out "her neck swung back" and replaces it with "her neck hinged back" is thinking critically about how symbols work in much the same way as the scientist who uses numerals and formulas to capture regularities in the behavior of molecules of sulphur gas. When a painter decides how to make a portrait, he has analyzed the qualities of the sitter and begins to solve the problem of translating the moving, colored volumes of a human form into patterns of lines and shapes. The musician who tries novel techniques on her wind instrument is not unlike the physicist who invents new uses for familiar lab equipment. In fact, this revised picture of the arts as intellectual has become so compelling that in its publication, Academic Preparation for College, the College Entrance Examination Board argues that the arts are an essential ingredient in high school education (College Entrance Examination Board 1983, 1985; Wolf 1986).

But the arts are more than another academic subject; they have some unique properties, properties that make them a provocative context for rethinking how we assess student learning. First, in the arts, the ability to find interesting problems is probably at least as important as being able to answer someone else's questions. In music, visual art, or creative writing, the arts often occurs in very large chunks spread out over a long period of time. Young musicians spend a whole semester coming to a final interpretation of a piece; young painters or printmakers spend months going from thumbnail sketches to finished works. Third, it is essential for young artists—not just their mentors and teachers—to develop a keen sense of standards and critical judgment. Consequently, in the arts, assessment cannot be restricted...
to highly structured problems or just to finished products. Nor can students be closed out. In traditions that reach back to the Renaissance, teachers of the arts have had to develop both informal and formal approaches to make visible the individual's ability to formulate novel problems, engage in a number of thinking processes, and reflect on the quality of his or her own work. For the first year and a half, researchers and teachers working on ARTS PROPEL have focused on three modes of assessment that do just this: projects, portfolios, and reflective interviews.

Projects: independent problem solving in the arts. Jiyoung is a student in Norman Brown's visual arts class. Having seen her highly controlled pencil and charcoal drawings, Brown urged Jiyoung to push beyond this kind of "safe" rendition. Writing in the corner of her sketchbook, he proposed the following project: "Next report period I want you to intensify your search for individual meaning in your work." While this is clearly "an assignment," it is more like a goal than a recipe. It was up to Jiyoung to find the intervening steps. Across the next months, among the class assignments in her sketchbook, she began increasingly to "doodle," combining her strong drawing skills with an interest in the fluent brush strokes characteristic of her native calligraphy. Acting as both teacher and colleague, Brown encouraged Jiyoung to look at and borrow from the brushwork of painters like Vincent van Gogh, Mark Tobey, Jackson Pollock, and Franz Klein. Her final product was a series of large ink paintings that brought together the eloquent brush technique of calligraphy with the demands of Western still-life and landscape painting (fig. 1).

But in terms of assessment, the "real" product was a kind of portrait of Jiyoung's ability to formulate the project. Because Jiyoung and other students in his class save the various phases of their work, Brown can look at the microgenests—or the unfolding—of their ideas within a particular project. Because he has more than final products available to him, he has been able to observe the ways in which individual students find and pursue artistic ideas. For instance, by studying Jiyoung's sketchbook and sampling her work at various stages in this project, Brown can begin to appraise the originality of her ideas; her ability to make effective use of the ideas of other artists, peers, or a teacher, without losing hold of her own vision; and her capacity to pursue an idea from the stage of doodles through to a finished painting. Though Brown and other teachers are still refining their assessment techniques, their work begins to suggest that if students were to make "biographies" of their projects and if teachers could be trained to "read" these biographies, educators might be able to describe differences in individuals' abilities to generate, choose among, and pursue worthwhile ideas.

Portfolios: seeing the processes that underlie long-term development. Up on the third floor of a high school in Pittsburgh, young musicians sit in a tight semi-circle around a small tape recorder that plays 16 measures of Wednesday's performance of "American Patrol." They listen to it several times, then switch tapes so that they can listen to the same 16 measures as they played it a week earlier. "So what did you hear?" asks James Stillwagon, their music teacher. The students compare the two performances, each one of them tossing in what he or she notices as improvement or backsliding. When the comments die down, Stillwagon sets out another question. "So what do you think we should work on for next week?"

These tapes, along with the accompanying discussions, are like a writer's drafts or an artist's preliminary sketches. When the tapes of the preparation of several pieces are included in a sequenced order, they make up what can be termed a portfolio—a chronologically sequenced collection of work that records the longer term evolution (the macrogenesis) of artistic thinking. Most portfolios include several projects (in order to provide a wide sampling of work), as well as independent work, a journal or sketchbook, or whatever other materials provide information about the student's (or group's) artistic development during a given report period, semester, or year.

Like projects, portfolios provide insight into students' abilities to pose and pursue worthwhile questions. What is remarkable is that Stillwagon and his colleagues have used the tech-
ology of tape-recording to allow the kind of reflective activities once available only to writers and visual artists. In the case of Stillwagon's students, their library of tapes and the accompanying discussions reveal that as beginners, students noticed only the most obvious errors: missed entrances or the way players failed to stay together. With repeated comparisons, and a strong emphasis on putting their perceptions into words, these young players came to think about the nuances of playing: articulation, subtle changes in dynamics, and a sustained interpretation or style of playing.

Because portfolios contain diverse types of materials—such as tapes of performances and discussions—they also provide insight into the range of different processes students can command or fail to grasp. For example, what Stillwagon asks of his students requires that they engage not only in performance, but in perception (listening to their playing) and reflection (describing and judging what they hear) as well. By looking across a student or a class portfolio, he can begin to see where an individual or an ensemble excels or flounders. He can see the particular profile of skills and how it shifts or improves over time.

**Reflective interviews**: students judge themselves. Typically assessment is the work of teachers; students don't make it, they receive it. However, in the context of projects and portfolios this can change radically. At the end of a semester, a student can take his or her portfolio, page through the materials, and form a picture of what has developed, how it came into being, where difficulties remain, and directions for future work. As part of the process of reflecting on the body of their work, students can become aware of the particular signature they give to projects, performances, or poems. This kind of self-awareness is a critical ingredient in being able to step back and think about one's work.

The power of these reflective interviews becomes clear if we consider the case of Connie, a high school junior who became a loyal member of Cheryl Parshall's "lunch bunch," a group of students who met at noon-
time to work on a series of poetry projects. In the course of her writing, Connie turned out a series of short poems. At the end of the semester, Parshall asked her students to talk aloud about what they noticed when they studied the corpus of their own writing. Asked to reflect on her own work in much the same way she might be asked to think about poems by W. B. Yeats or Emily Dickinson, Connie noticed—for the first time—that she had a style, a characteristic signature, as a writer. She was able to see how consistently she dealt with the hard facts and small ironies of everyday life by making common objects, like mops and chairs, speak. Without this sharpened knowledge of "what she was up to," it is hard to imagine Connie's going on to develop a keen sense for which words, forms, or kinds of figurative language best serve her poems (fig. 2).

**CHAIR**

_{If you can't find a partner, use a wooden one._}

**MOP**

_{Woman tall and thin With long tangled gray hair Must turn her life upside down To do her duty Holding her breath while washing her hair Wringing out the dirty water Then she goes to her duty Again._}

Fig. 2. Samples of Connie's Poems

Interviews like Connie's provide an occasion when teachers can assess just how self-aware students are: do they have an eye for their personal styles? Have they spotted their own weaknesses? Do they realize where they are particularly strong? But, at the same time, students can enter the assessment process through the interviews. They gain access to the full scope of their work—a body of work, that ironically, few students ever study. Students can be asked to think about their own characteristic styles, what improves with time, what needs work, even what seems to have "gotten lost." In treating their own work much as they might read the works of a "real" writer, painter, or musician, students confront fundamental questions concerning skill, insight, creation, and personal voice.

---

**The Portfolio Process in Pittsburgh**

What the first year and a half of ARTS PROPEL offers is a set of promising methods and a sample of intriguing case studies. We have been able to observe students' growth using projects, portfolios, and interviews. At the same time, we have witnessed teachers' growth as readers and interpreters of qualitative, developmental information about their students.

Ever since he has worked on longer term projects with his students, Norman Brown has become increasingly aware of what can be learned from studying the "biography" of individual works. "Nothing," he says, "nothing gets thrown out in my classroom anymore. If I see someone ball up a drawing and toss it, I get him or her to retrieve it. We smooth it out and put it in with the others."

Music teachers talk about having a whole new understanding of how to "hear" the development of musical thinking in daily rehearsals. By studying what students play and what they have to say about that performance, teachers are learning right along with their students. They have been testing a set of time-honored hunches about the kinds of musical dimensions it is easier or harder for young players to hear.
All of this is promising, meaning that it is exciting, but also that it has yet to be filled out. In the coming years, ARTS PROPEL has much to accomplish. The concepts of projects, portfolios, and interviews have to become reliable procedures that can be used by a wide range of teachers with students of varying ability levels. Researchers and teachers have to investigate just which aspects of student learning to document. Equally important is the work of helping educators to come to common, reliable assessments of the materials that students generate in their projects, portfolios, and interviews. Not least of all, there is the question of how such qualitative modes of assessment can “fit” within the demands of classroom life, let alone the confines of college admissions folders.

The Arts as Knowledge
Behind these anecdotes of students and teachers there are larger suggestions about why it’s worth bothering with what is obviously an ambitious project. First, the term “artwork” is no mistake. What these students show us is that, even during high school, the production or performance of a work involves not just interest, intuition, or gift, but problem finding, pursuit, choice, and reflection. In other words, involvement in the arts can constitute an extraordinarily worthwhile part of schooling.

Second, even this preliminary work indicates that we need not be limited to product-oriented, highly focused, closed modes of assessment. As individual as Jiyoung, the young musicians, and Connie may be, we can look at their projects, portfolios, and interviews and glimpse problem-finding, thinking processes, and the development of self-awareness and standards. Finally, these examples of artistic learning may illustrate dimensions of growth that are equally critical, and equally invisible, in other fields. There is no reason to think the concept of projects is germane only to the arts. Thinkers and students in the natural and social sciences can and often do incubate ideas, generate sketches, re-draft their work, and make revisions (John-Steiner 1985, Perkins 1981). Being able to combine any number of thinking processes is as essential to unearthing and piecing together the evidence about everyday life of colonial women or the complex social texture of immigration history. There, exactly as in the arts, a portfolio of projects, journal entries, and interviews might reveal as much about a young historian’s profile of abilities as it tells about a young musician’s pattern of skills. A young scientist might benefit from understanding her own style of inquiry, pattern of interests, problem-finding, and approach to data analysis, just as a young poet learns from seeing the signature of his own mind in his works.

However, the message from the arts is not simply one of sharing techniques. It entails a larger critique of educational values as well. Too often, within schools as institutions, the point of student assessments, especially formal testing or grading, is that they can be translated into measures of accountability. Grade point averages, scores on achievement tests, or college entrance examinations are often interpreted as measuring, not just which students do their work, but which schools are well run, which courses best prepare students for regents exams, or which teachers do best at “college prep” (McNeil 1986). In these circumstances, readily quantifiable modes of assessment win hands down. Not only are they easier to score and administer, but they appear to permit detailed and apparently “hard-nosed” judgments about exactly how well students, teachers, and administrators are doing.

But what about those questions buzzing in the twilight—the ones about students’ abilities to formulate new questions, pursue work over time, arrive at standards of excellence? Those skills simply can’t be tapped by highly structured, product-oriented, closed modes of assessment. Information about those skills can only come from looking at students engaged in open-ended, long-term learning where they engage in thinking critically about their own work rather than simply waiting for someone else’s “report card.” To make those skills visible, we must excuse ourselves from the hunt for the immediate, the evident, and the scorahle. We must look for and learn to describe the apparently invisible, qualitative, operational dimensions of achievement.

Here, then, we encounter a turnabout. Often the arts are seen as marginal in education. To survive, artists have often had to mimic or borrow from the structures of other disciplines. But where assessment is the issue, the arts and humanities carry profound messages for other fields.

References
Dennie Palmer Wolf is Research Associate, Project Zero/Harvard Graduate School of Education, Harvard University, 326 Longfellow Hall, Appian Way, Cambridge, MA 02138.