

# On Assessment in the Arts: A Conversation with Howard Gardner

The author of *Frames of Mind: A Theory of Multiple Intelligences*, Howard Gardner has spent years investigating issues of creativity, intelligence, and the artistic process. Here he explains the endeavors of Project Zero to develop assessment techniques for the arts. He contends that "making art" is central to artistic learning and that perception and reflection activities must be linked directly to student production of art.

**Y**ou and your colleagues at Harvard Project Zero are working with Educational Testing Service and the Pittsburgh schools to develop ways to assess student achievement in the arts.

Why?

We want to know whether individuals involved in the arts are getting something out of their experiences, and whether those results can be documented. I see school as a place to develop the different components of the mind. Artistic thinking—thinking in artistic symbols—is a distinctive way of using the mind, but one usually downplayed in school. For example, we use the mind in a certain way in creating or listening to music. You could work with mathematics or language for the rest of your life, and it would not affect your ability to deal with music. By the same token, the abilities involved in dealing with the visual arts—with sculpture or painting, with dance, mime, use of the body, and so on—all represent separate sets of cognitive skills. If we omit those areas from the curriculum, we are in effect shortchanging the mind.



Photographs by Constance Wolf

Now, it might not be necessary to nourish these abilities in school if they were developed fully outside of school, but it's obvious that in most cultures—and certainly in ours—there's very little attention to the arts outside of school.

**Is it really possible to assess achievement in the arts in a meaningful way?**

Even people who are strong advocates of arts in the schools are very much in conflict about assessment. To some extent, they feel that what's most important in the arts is difficult to assess: arts have personal meaning, they deal with emotional content, they're often very subjective. So some people, including people involved in the arts, feel that assessment is incompatible with their purposes. Others, though, feel that we must assess results if we are to justify the expense of offering these experiences in schools. But they often make the opposite error of trying to assess the arts in the same way other kinds of learning are assessed: with multiple-choice tests and so on.

**The assessment techniques you're developing are for use with all students, not just those with special talents?**

Exactly.

**Are they intended as measures of ability or achievement?**

In the beginning, we had the mistaken idea that one could assess aptitude apart from intensive involvement with material. We're convinced now that that probably doesn't work anywhere, but it certainly doesn't work in the arts. It's pointless to test people's musical or dramatic aptitude unless they've had a significant amount of experience in artistic thinking. And many kids—even at the high school level—have had virtually no exposure at all. So our approach has been to involve students in very rich kinds of artistic activities. We involve them not only in artistic creation—actually painting, composing, and so on—but also in what we call "projects." These are curriculum modules that involve

fairly long-term kinds of analysis and perceptual discrimination, as well as considerable "reflection" on what they're doing. And after students have had some experience with these kinds of things, we assess them, so to speak, "on the fly" while they're actually engaged in these projects.

As an analogy, let's say that somebody wanted a chess aptitude test. We could give people a chessboard and say, "All right, play with these for 20 minutes, and we'll see how good you are." Or recognizing that they don't know the rules of chess, instead we could see how good they are at counting, calculating, spatial reasoning, and so on. But you would probably find that such related abilities are a poor predictor of actual chess playing, because chess is a complicated activity that also involves "psyching out" what's on your opponent's mind, thinking several steps ahead, that sort of thing. So it's much more sensible to take a hundred people who have never played chess before, teach them the rules, have them play for a while, and then begin to give them chess problems.

That's basically what we're doing: we're assuming that most kids have not had much experience artistically. We immerse them in activities that call for artistic thinking, and after they have some familiarity with an activity, we use various kinds of assessment techniques, including some straightforward ones as well as some that are more unobtrusive.

**How can you be sure about the validity of these new techniques?**

Well, to begin with, they're not all new. Both Project Zero and ETS have had extensive experience that tells us what sorts of things are *likely* to work and not to work.

But a crucial part of this effort is that, from the very first, we have worked directly with teachers. In workshops we conducted in Pittsburgh, the teachers became familiar with our materials and began to do exercises on their own, and then slowly began to work with students while we looked over their shoulders, trying to make sense

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of what the students were doing.

The first step, in other words, has been to find out whether the materials we developed were acceptable to teachers themselves, which is often not a trivial matter because some of these ideas are not very transparent. Also, the teachers often make useful suggestions and modifications. Once the teachers think the exercises are usable, they try them with students. Then, if they work, we find that the teachers are usually able to reach general agreement on how to analyze the results.

A good example is music. Because we believe it's important to work with teachers, we started with what music teachers were concerned with: performance. We came up with a set of measures to look at changes in student performance over time: how a clarinet player or an ensemble improves. I am pleased to say that in our first go-around with teachers there was actually fairly high agreement on how to score the results.

Similarly, in the literary area we are developing a complex set of instruments to monitor a variety of different aspects of student writing. We began with poems. We gave the kids a poetic frame with which to work, and then monitored their figurative language, their sense of voice, and so on—there are a lot of things to look at. Again we've been pleased with the initial responses. The teachers have not only caught on to the system but are excited by it.

**These measures are intended for use by teachers, then, not by external evaluators?**

Our goal is to come up with instruments that make sense to teachers in regular schools and that will provide useful feedback on how students are doing. That's been the goal of the Rockefeller project in general. We're not part of the current critical thinking initiative, but this effort is analogous to it.

Whether there will eventually be a set of National Assessment-type instruments that could be administered without intensive participation by local teachers is a question that hasn't been answered yet. Clearly, that is the sort of thing that ETS might want to do, and I'd be glad to see it happen if it seems feasible.

**What are some of the factors to consider in assessing aesthetic growth?**

We think one should monitor three kinds of things: production, perception, and reflection.

This idea isn't highly revolutionary, but it's more unusual than one might think. This past spring I spent three months in China. We have a great deal to learn from the Chinese about teaching students to produce great works in the traditional way. But they haven't confronted at all the issue of how people learn to see art nor of how they reflect on it.

Now, there's a growing group of American art educators who say our schools spend too much time on producing art and that we ought to teach the arts as we do other disciplines: take a verbal and analytic approach—emphasize historiography, aesthetics. I



*From the very beginning, Gardner explains, teachers have contributed their ideas and judgments about assessing student work in the arts to Project Zero.*

don't think that's necessarily a bad thing, but there's a great danger that it will slip into the traditional ways of knowing, verbal-analytic and logical-mathematical forms, which are covered pretty well in the rest of the curriculum.

Our approach differs from both the Chinese and the American in two ways. One is that, particularly with the younger kids, production continues to be central. That is, we think artistic learning should grow from kids *doing* things: not just imitating, but actually drawing, dancing, performing, singing on their own. And I mean not just songs they've been taught, but singing their own compositions. That's central to our approach—and it's very different from just learning traditions from the past or just talking about art.

The second aspect of our approach is that, as much as possible (and our exercises strive to do this), production should be linked intrinsically to perception and reflection. Perception means learning to see better, to hear better, to make finer discriminations, to see connections between things. Reflection means to be able to step back from both your production and

your perceptions, and say, "What am I doing? Why am I doing it? What am I learning? What am I trying to achieve? Am I being successful? How can I revise my performance in a desirable way?"

Now, that's quite different from the "discipline-based" approach, which always proceeds in terms of the standard disciplines. Our approach grows out of the child's actual experience with the arts. We don't talk about perception or reflection apart from artistic *activity*. As kids grow older, those aspects can be taught more intensely. I have no objection to teaching art history to 10- or 12-year-olds, but I do object to teaching it apart from actual artistic production.

An example we use describes a student at work on a triptych: portraying images of three faces in a tripartite work. After working on the project for several weeks, she was introduced to the way artists in the Middle Ages put together triptychs. That way the student was much more interested, because she herself had been trying to solve the same problem of producing three distinctive yet complementary forms.

Another example, which I used a lot in China, is theme and variations. You take something like "Happy Birthday" or "Twinkle, Twinkle," which everybody knows, and you make sure kids can sing it or play it on a kazoo. Then you have them do "Twinkle, Twinkle" in different ways: do it sad, do it happy, do it spring, do it winter, do it limping, do it in 3/4 time, and so on. Then you show them that, in fact, Mozart also wrote variations on "Twinkle, Twinkle, Little Star." Again, the children are interested because they've been confronting the same problem as Mozart.

**That type of exercise would seem to be generalizable across disciplines.**

Many of them are, but not all. Exercises in pitch or in color arrangement don't have direct analogies in other art forms. But at Project Zero we've been working simultaneously or in parallel with a number of different art forms. We try to get maximum applicability but, as you may know, my theory of multiple intelligences holds that no two forms of thinking are exactly comparable.

**I'd like to ask about your theory. First, though, will you give one or two more examples of ways to assess growth in the arts?**

A good example that begins with perception is the Mona Lisa exercise. We show some slides of fakes of the Mona Lisa along with the original, and we get the kids very interested in which is which. We show a slide and say, "What is this?" ... "It's the Mona Lisa." ... "Are you sure?" Some kids say one thing and some another. They talk about the differences they see and the reasons. After that kind of reflection, we get them experimenting on their own, trying to either copy a work like the Mona Lisa or copy things like signatures, so they begin to see what is involved in doing something so that it looks as if it was done by someone else. Now, that task begins with perception, passes through reflection, then eventually goes to production. And we go from a fun puzzle to the serious question of style.

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Another form of assessment involves the building of a portfolio. Over a period of time, students accumulate their various efforts, including drafts, notes, false starts, things they like and don't like. Their portfolio becomes a kind of data base that both teacher and student can look at to see what's been done and what's been learned. Some of the measures can be quite explicit: how many entries kids make in their notebooks, how detailed they are, things like that. But others can be more difficult to get exact reliability on; for example, how many different sources of information have been used in trying to improve a work, or when a work has deepened, rather than simply changed.

We think these kinds of data should be enlightening to students, even if the teacher never looks at them. But of course the teacher does look at them too.

**I see a lot of implications in this project for teaching and for curriculum design.**

And not just in the arts. Almost everybody realizes that the American schools have been disappointing in recent years. But I think most of the reactions to this concern will not be

very productive in the long term. Getting higher scores on standardized tests is not the real need, and at best it responds to symptoms rather than to the underlying disease. What we need in America is for students to get more deeply interested in things, more involved in them, more engaged in wanting to know; to have projects they can get excited about and work on over longer periods of time; to be stimulated to find things out on their own. In a way, the arts are a good testing ground for such activities because many members of the educational establishment don't care about them so much, so teachers can afford to take more chances.

**A little earlier, you mentioned your theory of multiple intelligences. How does this arts assessment project relate to it?**

Well, nobody has to buy my theory to buy the project, and in fact it's only tangential. But it is related in the sense that program officers at the Rockefeller Foundation, our sponsors, felt that many young people are being cheated out of the opportunity to receive a good education—by college admissions criteria and so on—because, while they have many abilities and many achievements, they tend not to do well on standardized tests. There's a lot of agreement about that, even among the testing experts. Having a certain kind of intelligence we might call "test smarts" helps some people scoot through school very well, but everybody knows that it doesn't have nearly so much predictive value for what happens outside, or after, school.

So the Rockefeller Foundation became interested in the possibility that school has focused too much on a certain combination of intelligences—linguistic, logical, mathematical; but that life certainly involves more than that, so school should be concerned with more than that too. They wanted to see whether we could find ways to pick out the kids with skills in some of these other areas, so those kids would have a better chance to get into a good college and to achieve success in life, and would also acquire a better self-concept in the process.

**For those who may not know your theory, would you summarize it briefly?**

Evidence from a variety of sources, especially new information about development of the nervous system and organization of the brain, indicates that human beings have evolved over a long period of time to think in at least seven ways, which I call "intelligences." I mentioned two of them—mathematical and linguistic—but there's also musical, spatial, bodily-kinesthetic, interpersonal, and intra-personal intelligence.

Everybody who's normal has the potential to develop each of these intelligences to a large extent, but we don't all have the same profile to begin with, and we certainly don't all end up with the same profile. Most important, strength in one intelligence does not have predictive value for strength in another intelligence. You can be very strong in music and not in spatial, or vice versa. Therefore, psychologists who claim that intelligence is a single entity—educators who think of students as either smart or dumb—are wrong. A person can be smart in one area and dumb in others.

Part of our effort is trying to find how best to define each of the areas and how best to assess aptitude and achievement in them. We're also interested in which forms of intelligence are important in the various arts. For example, linguistic intelligence plays a role in the study of science and history and geography, but it's of central importance in writing fiction or poetry.

**As a psychologist, what made you decide to define intelligence this new way?**

It was probably less as a psychologist than as a participant in American public school life that I felt intelligence had been appropriated to refer to a very narrow band of abilities. And as long as the word is saved for just those abilities, people have the license to call everybody who doesn't have those abilities "stupid." So I deliberately tried to use the word in a new way to make people realize that there were a lot of tacit assumptions that needed to be confronted.

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I would have no problem with calling intelligences "talents," as long as people also called language and logic "talents." But they don't; they say that's being smart. The fact that I've annoyed many people by using the word this way is a kind of perverse confirmation that people thought they owned the word and that it had to be used their way.

**How is the theory being accepted?**

Well, the closer people are to psychometrics, the more they don't like the theory at all—and they probably have good and bad reasons for that. It's a threat to a lot of people who have an intellectual and a financial stake in a certain way of looking at things. I'm pleased by the fact that people who I think are good scientists but who don't have a vested interest in a particular orientation often like the theory. Biologists think it's sensible. And even psychologists—those who aren't wedded to psychometrics—feel it's a useful point of view. Many educators find it appealing. It's not a theory with a capital T; it's a new way of thinking about things, a new way of organizing a lot of information.

**A skeptic might say that it is just another way of describing what we've always known: that people**

**differ in their abilities.**

I think it's taking two forms of intelligence off their pedestal.

**The skeptic might also say that, far from ignoring the other forms of intelligence, schools do a lot to foster them. They certainly pay attention to athletic talent, for example. They do teach music and art. They encourage kids in their social activities, and so forth.**

I can't go along with that. Music and art are the first to go when there's a financial crunch. As kids grow older, they get less and less of it. It may be important in kindergarten, but it disappears by eighth grade, except for the kids who are professionally oriented. Probably the most important reason I disagree is that even though there's a lot of focus on the kids who are good performers—who play an instrument well, for example—teachers don't often engage them in musical thinking, in visual thinking. I can only say that these are new ideas to many of the art teachers I work with.

**If your theory were more widely accepted, how would that affect school practices?**

I think that it is beginning to be accepted. Education is gradually becoming more individual-centered. Surely we've passed the point where we want to teach every kid the same thing the same way. My theory gives educators a way of thinking about individual gifts and how to accommodate teaching to them, but also a way of teaching conventional subject matter in ways more accommodating to the different ways of knowing. A student's profile of intelligences ought to have some effect on the way he or she goes about learning history. Another implication is the realization that, while assessment is important, we need to be much broader in what we assess and much more flexible in how we assess it. □

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