Intelligent Assessment in General Music

What Children Should Know and (Be Able to) Do

by Robert A. Duke

The recent adoption of the National Standards for Arts Education and increasing demands for revised assessment of student accomplishment have the potential to influence positively and profoundly the way music instruction is delivered to children in schools, but the extent to which this potential is realized is in many ways dependent upon the assessments by which the Standards will be measured. Whether designed by state boards, district curriculum committees, or individual teachers for use only in their own classrooms, the assessments inevitably will influence what teachers and students consider most important about music instruction.

Assessments related to the National Standards can do very good things for children (and teachers) by defining with some clarity what children are expected to do with music in and beyond school. But assessments can also perpetuate or even increase the trivialization of music as subject matter by focusing primarily on disconnected, unimportant details and creating unrealistic demands about what must be covered in a given period of instructional time. Trying to squeeze too many ideas, skills, and activities into too little time precludes spending adequate time with any one idea to develop some measure of depth in students' understanding and skill.

Choices about what gets time and what does not are perhaps the most consequential decisions that any teacher makes.

Too Little Time—Too Much Stuff

Teaching time is a zero sum game, to borrow the economists' expression, which means that adding time to one topic or activity requires subtracting time from something else. Many recent policy statements in education and most teachers' personal experiences identify time limitations as one of the great impediments to teaching well and accomplishing meaningful goals. Time is as limited as it is precious, and, for many children, time spent in music class is very limited indeed. Choices about what gets time and what does not are perhaps the most consequential decisions that any teacher makes. And it doesn't really matter how much time is available in which to teach. There will always be more to learn than there is time for learning, so whatever gets taught should represent what the teacher believes is most important for students to

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learn. But often (and in textbooks, very often) rather than make reasoned decisions about what gets included and what is left out, teachers may attempt to cover everything, but, because of the strictures of time, little of it with any depth. This is not unique to music teaching. In the competition between breadth and depth in all disciplines in education, breadth often wins.

Nearly all music learning involves the development of skills—performance skills, listening skills, writing skills, thinking skills. And any skill development requires consistent, correct repetition over time. A child's *having done something* is not the same as that child's being *able to do it* again in the future independently. Consider singing as an example. Singing requires practice—consistent, correct repetition. Singing needs to happen a lot. If a teacher's goal at the end of fifth grade is that children happily volunteer to sing alone or in groups a number of favorite folk songs from the American tradition (and know all the verses) and sing with a pleasing tone and accurate intonation, then children need to sing regularly in school. If the teacher further expects students to be musically literate, then they must not only sing regularly but sing from notation regularly as well.

Now to the extent that students are spending time singing and reading music, they are spending less time doing other things: creating sound pieces with found instruments, playing instruments like the recorder, listening to recordings of orchestral repertoire. Is that OK? Well, if the teacher's priorities are clear and learning to sing competently and confidently is a principal goal of instruction, of course it's OK, because the teacher has determined that, at the end of students' time in music (after fifth grade, for example), the students choose to sing and like it and are good at it.

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In making a case for more varied music experiences, some teachers might argue, "Well, I can do all the things that comprise music. We'll sing and play and compose and listen and analyze and..." Can all of these things happen in the limited time available? Possibly. Can all of these activities be addressed with the level of depth required for students to independently apply the knowledge and skills associated with these aspects of musicianship? Absolutely not. Not in thirty minutes every third day.

If a teacher works in an elementary school with a three-day rotation, what is he or she going to teach students in *thirty hours of class time each year?* There are several choices. One is to expose students to many activities, with little or no opportunity to develop them with depth or connect them in a meaningful way. Or, a teacher may teach children to do a few things really well—so well that students (all of the students) actually become good at them, independent, enjoy them, and perhaps even continue to do them beyond school. This is not to say that students of the teacher for whom singing is a priority will never compose or never play instruments, but these other activities will be woven into the fabric of regular singing. Because there is simply not enough time to do everything with depth, some aspects of musicianship must be given priority and time while others receive less attention.

Even in Math

We in music education have been accused of viewing our colleagues in mathematics with "importance envy," because mathematics as subject matter seems universally accepted as a vital core component of the curriculum, while music is considered less central to what students need to know. But the problem of breadth overwhelming depth pervades educational practice across many disciplines, including mathematics. Like the arts education community, mathematics educators developed a set of national standards, and the data regarding their implementation illustrate the issue of depth versus breadth.

The first results of the Third International Math and Science Study (TIMSS), the most widely cited assessment comparing the math and science skills of children in forty-one countries throughout the world, including the United States and our major trading partners, reveal once again that eighth-grade students in the United States in mathematics "...are far behind Singapore and Japan which are among the top-scoring nations in the world in both math and science."[1] Unique to the TIMSS were systematic classroom observations of eighth-grade mathematics lessons in Japan, Germany, and the U.S. A total of

231 eighth-grade mathematics lessons taught by a representative sample of teachers in each country were videotaped and analyzed to determine what actually happened in those math classes. The teachers also answered extensive questionnaires about their instructional practices, and experts in the discipline rated the quality of the lessons on the videotapes. Recall that the math scores of Japanese eighth graders are among the highest in the world, and scores of eighth graders in the United States are below the international average.

Observations of mathematics instruction in the United States and Japan revealed striking differences in the way that math is taught in these two countries. Before describing those differences, I ask that you think about some of the so-called commonsense rationales for explaining the differences among students' performances. It has been suggested that Japanese children outperform their American counterparts because Japanese students spend more time in math classes in school each year, Japanese teachers assign more math homework, and Japanese children spend less time watching television. All sound like reasonable explanations. But none is supported by the eighth-grade data from the TIMSS.

What is very different about the students in these countries is the way they spend their time in math classes in school. And one of the most consequential differences is the fact that Japanese eighth-grade math classes cover significantly fewer topics and topic segments than do math classes in the U.S. Less stuff, more depth. In fact, the average numbers of topics and topic segments covered per class in the United States are nearly twice the numbers covered in math classes in Japan. Commensurate with the greater time devoted to each lesson topic, the level of sophistication observed in the Japanese lessons is nearly two grade levels higher than in math classes in the United States. In Japan, 83% of the topics stated were developed in some way during the lesson, and this development included some form of deductive reasoning by students. In the United States, only 22% of the topics stated in the lesson were developed in some way, and none of the United States math lessons observed included opportunities for students to apply deductive reasoning in developing solutions to problems.

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It is important to consider that the mathematics community in the United States first set Curriculum and Evaluation Standards in 1989, which were followed by Professional Standards of Teaching Mathematics in 1991 and Assessment Standards in 1995. According to the TIMSS report, "The essence of the recommendations in these reform documents is that instruction should be more than mere mastery of facts and routine skills. It should require students to understand and apply mathematical concepts in new situations." The report goes on to say,

> United States teachers believe that they are implementing current reform ideas in their classrooms. When asked specifically to evaluate their videotaped lesson, almost three-fourths of the American teachers rated it as reasonably in accord with current ideas about the teaching and learning of mathematics. They were more than twice as likely to respond this way than...the Japanese...teachers. Teachers who said that the videotaped lesson was in accord with current ideas about the teaching and learning of mathematics were asked to justify their responses. Although the range and variety of responses to this question were great, the vast majority of American teachers' responses pertained to surface features, such as the use of manipulatives or cooperative groups, rather than to the deeper characteristics of instruction, such as the depth of understanding developed by their students.[2]

The recently released results from the National Assessment of Educational Progress attest to the fact that most children in school are unable to demonstrate the kinds of music skills that all of us would like to see.[3] It is also undeniably true that most children who benefit from music instruction in school do not, as adults, demonstrate the types of attitudes, understanding, and skills that we would like for them to demonstrate. Witness the widely acknowledged graying of Ameri-

can arts audiences and our recent Get America Singing...Again! efforts. Why isn't America already singing and attending concerts and purchasing recordings of art music if that's what teachers believe are important aspects of an adult's musical life? Although the precise reasons are not known, it seems reasonable to conclude that one contributing factor is that students do not spend enough time with any one aspect of music learning to develop the independence necessary for them to continue beyond school, even though the students in music classes are busy. They're listening to music, they're playing instruments, they're composing, they're "learning across the curriculum"—all of this in thirty minutes every third day. But how is someone going to compose and play and sing and discuss and arrange and improvise and read from notation—in thirty hours of instruction *per year?* Not with much depth, because there is simply not enough time to do all of that with depth.

For many teachers, the National Standards in music may imply more activities than can be learned with depth in the time available, and without carefully constructed assessments, it is understandable that teachers may feel the need to cover all of the activities listed and believe that students are learning. But learning is an active process. Students learn by what they do, by actively engaging in musical tasks, by using information and skills to accomplish tangible goals, and *having the experiences repeatedly.* Teachers may believe, for example, that they are "implementing the National Standards," because their students engage in the activities that the Standards describe. But, again, a student's having done something (or, in the lingo of education, a student's having been exposed to something) is not the same as his or her being able to do it independently in the future. To sing, play, analyze, or compose independently and well requires considerable time and repetition.

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Write the Tests First

So how can assessments contribute to better preparing students for life beyond music classes in school? How can a teacher develop meaningful, realistic goals that will increase the likelihood that adequate time and attention are given to developing students' musical independence? A helpful first step is to use assessment as a *starting place* in planning—rather than thinking of assessment only as something that comes at the end—to begin by developing precise descriptions of what students will do to demonstrate that they have learned what has been taught and using assessment as the basis for all subsequent planning of daily instructional activities.

In this way assessment may provide a sense of direction, a sense of purpose, and most importantly, a sense of priority about what students should accomplish in music. If only broadly-stated goals are written at the front-end of instruction, without careful consideration of how those goals will be assessed, then it is possible to include any number of skills and activities, because the goals are written without regard to either the means of determining whether they have been accomplished or the time required to accomplish them. We can say that we want our children to do...well...everything: sing, play, compose, analyze, improvise, criticize. But writing assessments for these goals puts a whole new spin on things. Assessments focus attention, because they require our thinking about a real student walking into a room and actually doing something independently: playing, singing, writing, speaking. It's no longer a matter of what we have done with the student; it's now a matter of what the student does on his own.

There are many ways to evaluate student learning, some of which get to the heart of what's most important while others simply scratch the surface. Our discipline, like all disciplines, comprises innumerable bits of information and skill, any of which can become a part of assessment criteria. We can ask students to fill in the missing note values in incomplete measures, sing a descending minor third, spell triads, and define the word recapitulation, but it would be a mistake to conclude that a student who can obtain the correct responses on a test of these bits will necessarily *apply* the bits to some meaningful whole in the future.

What's important about this issue is that the kinds of things that appear on tests are the kinds

of things that students, parents, teachers, and administrators come to believe are important. Want to get students' attention about what they're learning? Tell them they'll be tested on it. Want to get teachers' attention about what they're teaching? Tell them their students will be given a *standardized* test on it. Want to get administrators' attention? Tell them the students in their school will be given a standardized test and the results will be published in the *newspaper*. Now if tests have this kind of effect on teachers and learners, it becomes especially important that the tests embody what experts (i.e., we teachers) believe are the most important, substantive, and meaningful

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As an example, think about how we commonly evaluate what children know about tonality and key. Tests related to this issue most often are composed of items in which a key signature is presented and students are asked to identify the key name or, conversely, the name of a key is given and students are asked to supply the key signature. On many examinations, this is the extent of it. Although there certainly is nothing harmful about being able to say that a key signature with two sharps could be D major, knowing *only* that is pretty useless. It's the kind of information that Alfred North Whitehead called "inert knowledge"—information that is generally not useful because it's not connected with anything else. Many children who get the correct answer, if asked to explain a little deeper, might say that, "you go up one from the last sharp," or something similar. But the fact that the last sharp happens to be the leading tone in the major key (so if you "go up one" from the last sharp you will have identified the tonic of the major key) is merely coincidence. Knowing this, by itself, is to know nothing meaningful about tonality in common practice tertian harmony. So why is it that many students learn this fact and understand little or nothing else about tonality? Because this is what appears on the test, and because it's on the test, students (and teachers perhaps) come to believe that this is what's important to know about tonality and key. But is it really?

Daniel Koshland, former editor of *Science*, the most prestigious interdisciplinary science journal published in the U.S., wrote that much of what is stimulating, engaging, and rewarding about the practice of science and math (i.e., doing science and math) is virtually absent in many math and science classes in school.[4] In school, children learn the four ways that ... and the five characteristics of ... and the three things that lead to ... and to write Ohm's Law. And when that's the sum total of your knowledge of science, it is doubtful that you will understand what's so potentially cool about doing science. This is

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not a new idea. Jerome Bruner articulated the very same point nearly forty years ago.[5]

So it is, often, in general music. Bright, musically sophisticated children enter music classrooms and rehearsal halls in school, ready to "do music," but often engage in activities that are quite unlike what most musicians in real life (including us) would describe as interesting or engaging or embodying the core principles of musicianship. How can this be? It may be, at least in part, because we have not planned clear and explicit assessment criteria—criteria that convey *a vision of our students as accomplished learners.*

Musical Meaningful Assessment

So how do we change this? By changing the nature of the assessments themselves. In general, the more compartmentalized the assessment tasks and the less these tasks involve the *application* of knowledge and skills in the practice of genuine musical behavior (performing, listening and explaining, creating), the less likely it is that students will come to develop skills that will persist

beyond school. Meaningful, intelligent assessments involve students actually behaving musically in ways that real people do in real life beyond school.

One of the greatest impediments to our thinking creatively about this process is that we've all gone to school ourselves. And through our school experiences, we've developed habits of thought that do not necessarily lead to our focusing on the core principles of our discipline. This is not unique to music instruction. It pervades public education in every field of study. We often learn disconnected minutiae about math or science or social studies, wondering how anyone could possibly find this stuff interesting.

If assessments are to be useful, they must comprise students' actually doing with music the things that teachers believe are most important, whether singing, playing, composing, or writing or speaking about music. They must involve students in active tasks that are just like what we hope children will do with music beyond school. Within this frame of thinking, vocabulary tests are replaced with brief writing or speaking assignments that focus on using music vocabulary, because knowing the definition of a word is not the same as using it to express ideas. Listening and reading assignments are evaluated with informal discussions or brief essays in which students describe what they know and use the information to communicate with others. Tests of naming note values or counting rhythms are replaced with students' performing from notation.

Goals = Activities = Assessment

The National Standards provide an excellent starting place for making decisions about our vision of students as accomplished learners. But I would like to offer the following edition in the subtitle of the Standards document: Replace "what students should know and be able to do" with "what students should know and do." Now this may seem at first like ivory tower hair splitting, but deciding what students *should be able to do* is consequentially different than deciding what they *should do.*

In our own experiences as learners there are many things that we know about and many things that we're able to do that are not part of our ongoing life experience. Think of the large proportion of the literate population of the United States who do not read for pleasure—ever. Consider this in light of the countless hours, dollars, and efforts devoted to teaching children "to be able to read." I doubt that most language arts teachers are satisfied with the absence of reading as a central part of most adults' lives. So what's the problem?

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Perhaps amidst all our efforts to teach students to be able to read, we failed to teach many of them to read independently—to like to read or to choose to read or to want to read. How could we miss this? Perhaps it's because we began by thinking about what children need to know first, second, third, fourth, and so on, rather than beginning with a clear and vivid image of our students as accomplished learners, as adults in their own time, choosing to read as a means of gathering information, as a means of learning new ideas, as a means of experiencing vicariously the lives of others, as a means of finding humor in the human condition, all the things that reading can bring.

To think differently about planning music instruction, consider beginning with a vision of students as accomplished, literate, inquisitive, skilled, thinking musicians. What does that vision look like? If we take the time to actually describe accomplished learners with some precision—again, not in terms of what they're able to do, but in terms of what they do with music—and if that description is sufficiently explicit, then we have defined simultaneously not only the assessment criteria but the goals of instruction and the nature of the daily class activities as well. All in a single stroke.

We've all heard the often espoused adage that "teaching for the test is a bad thing." But this is true only if the test is a dumb test; that is, if the test fails to address the most meaningful, important, and substantive aspects of the discipline. If the test does in fact embody the most important, meaningful, and substantive aspects of the discipline, then I would argue that teaching for the test is precisely what we should be doing every day, because "the test" (i.e., the assessment criteria) and the objectives-goals-outcomes (depending on which decade you completed your undergraduate studies in education) are the same thing. But all of this rests on the premise that the test reflects our vision of students as accomplished learners. If it does, then we have taken a very big step toward clari-

fying our expectations for our students and for ourselves and have defined what needs to happen in class every day.

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This way of thinking about assessment shifts the emphasis away from the activities that take place in general music and the *repertoire* that is performed in choir, band, or orchestra, and toward the fundamental skills of intelligent, literate, musicianship that all of us intend for our students to learn. The point of our instructional practice is not, after all, to teach students to perform a particular piece or to participate in a given activity. The music repertoire and instructional activities are only the experiences through which we develop knowledge and skills that (hopefully) will be applicable, meaningful, and useful beyond school. It is these lifelong musical and intellectual skills that teachers are working hard to develop, because they form the basis of what students will take with them when they leave school.

If the assessment criteria reflect the application of knowledge and skills, then we can plan our daily activities to make certain that students practice the assessment criteria every time we meet them. Think of how this may change the way we evaluate what we're doing. It permits us to examine every day how the experiences that we provide our students are connected to deep understanding, competent, confident performance, and lasting appreciation of a profound form of human expression.

Notes

1. National Center for Educational Statistics. 1996. *Pursuing Excellence: A Study of U. S. Eighth-Grade Mathematics and Science Teaching, Learning, Curriculum, and Achievement in International Context.* Washington, DC: U. S. Government Printing Office (may be downloaded from http://www.ed.gov/NCES/timss>).
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3. Lehman, Paul R. 1999. "National Assessment of Arts Education: A First Look," *Music Educators Journal,* 85(4), 34–37; also National Center for Educational Statistics. 1999. *The NAEP Arts Report Cards: Eighth-grade Findings from the National Assessment of Educational Progress.* (Http://neces.ed.gov/nationalsreportcard/report197/1999486.shtml).
4. Koshland, D. E. 1989. "Science Competency through Fun," *Science,* 243, 989.
5. Bruner, J. 1977. *The Process of Education.* New York, Random House.