

## Measurement and Evaluation

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## Development of the State Music Assessment in Illinois

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### Introduction

Illinois legislators recognized music and other fine arts as fundamental to education when they passed an educational reform bill in 1985. That legislation, one of Illinois' responses to *A Nation at Risk* and other reports on problems in American education, named six "fundamental areas of learning": language arts, mathematics, science, social sciences, fine arts, and physical development/health. The fine arts include visual art, music, dance, and drama/theatre. All students are expected to receive fine arts instruction throughout their schooling. And students will be assessed in the fine arts at both the state and local levels.

After the reform legislation passed, state goals were developed in each content area. Individual school districts developed local objectives to address the state goals. The state department of education (known as the Illinois State Board of Education, ISBE) will assess students in the state goals. School districts will assess local objectives.

This article describes the development of the state fine arts assessment, focusing particularly on the music component of it. Since statewide assessment of the fine arts is not scheduled to begin until April 1994, the development is still underway. This article will describe and discuss progress to date.

### The Illinois Fine Arts Goals

The state fine arts goals, listed here, were developed by committees of educators who worked with the state department of education:

As a result of schooling students will be able to 1) understand the principal sensory, formal, technical, and expressive qualities of each of the arts; 2) identify processes and tools required to produce visual art, music, drama, and dance; 3) demonstrate the basic skills necessary to participate in the creation and/or performance of one of the arts; 4) identify significant works in the arts from major historical periods and how they reflect societies, cultures, and civilizations, past and present; 5) describe the unique characteristics of each of the arts.

### Two Observations About Goals

The goals apply to all students, not just to those specializing in an art form or participating in the arts as an extra-curricular activity. All students are to receive arts instruction throughout their schooling. State and local assessment will include all students at the grade levels tested (grades 3, 6, 8, and 11).

The goals emphasize cognitive knowledge of and perceptual skills in the arts, although one goal specifically refers to student performance or production in the arts (and each student is

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expected to attain that goal in one of the arts). Thus, schools with arts programs that are comprised of essentially performance or production experiences for selected students are not likely to meet the state goals.

### Assumptions/Limitations

As the process of developing the state fine arts assessment began, at least two assumptions were recognized. 1) The state assessment is of the state goals, not current arts program goals. The assessment should be validated against the state fine arts goals rather than actual instructional goals. The intent of the reform legislation was to improve education, and the goals represent educators' visions of what students should learn in the fine arts. 2) It may be necessary to limit the assessment to multiple-choice items. There are approximately 100,000 students at each of the four grade levels. The state must assess students in all six content areas. The test in each area should require no more than one hour. Thus, machine-scoring is almost essential.

As the development progressed, other assumptions or limitations became evident. For example, it became obvious that a traditional multiple-choice test could provide only limited information about student achievement in the fine arts. In particular, student performance or production (the third goal) could not be assessed without observing performances or evaluating the products. Therefore, the state assessment would not include the third fine arts goal. It would instead be assessed locally. At the local level any valid assessment approach may be used, although aggregating data cannot be justified if administration and scoring procedures are not uniform.

It also became obvious that the assessment of students' perceptual skills would be most valid if students were required to respond to fine arts performances or products. For example, students would be asked to examine a visual artwork or listen to a musical selection and answer questions about it. This limitation was addressed in the visual arts by printing images of major artworks in test booklets and asking students to answer questions which required examining the images.

*"As might be expected, fine arts educators have had some serious concerns about fine arts assessment since they first learned that the reform legislation required it."*

At one point, music notation was printed in tests. Eventually, however, it became evident that knowledge of music notation was a prerequisite to answering most questions with notation. (Tests will probably include some music notation, but only when questions are directly about notation.) It became clear that performances in music, dance, and drama/theatre cannot be presented to students without sound and/or movement.

In an attempt to address this limitation, an experimental videotaped music assessment has been developed. It contains excerpts from music performances and questions for students to answer. This assessment approach appears to be potentially much more valid for assessing one kind of students' perceptual skills. Traditional paper-and-pencil tests can measure perception characterized as audiation. The economic and logistic difficulties of enabling 100,000 students to view the tapes are far from resolved.

### Assessment Development Strategies

The state department of education began developing fine arts assessment plans in late 1986. A major purpose of the developmental effort was to assemble a large collection (or "bank") of valid and reliable assessment items to use in constructing multiple forms of state tests.

The collection would be assembled gradually by pilot-testing assessment items with samples of Illinois students and adding selected items to the bank. Items would be added only if they passed judgmental review and met statistical criteria (to be discussed later). With annual pilot testing, the development would require at least several years. (Initially, the fine arts assessment was scheduled to begin in April 1992. It was later postponed to 1994.)

### Sources of Assessment Items

Most of the items that were piloted the first year were from existing fine arts achievement tests which were publicly available. ISBE obtained copies of those tests as well as permission to use them. The tests were from several other state departments of education and the National Assessment of Education Progress (NAEP). ISBE also purchased a commercial bank of assessment items. Illinois fine arts educators then reviewed all of the items and identified those they considered appropriate for assessing Illinois students in the state fine arts goals. Those items were pilot tested in April 1987 with samples of students. They were supplemented with additional items that were written under contract with a private testing corporation.



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After that first year, it was necessary to find another source of assessment items. The supply of items from elsewhere had been exhausted. State assessment staff and fine arts educators were disappointed in the quality of items produced by the private corporation. It was decided that Illinois fine arts educators would write the items. They would be trained in item writing and would work under contract with the state department of education. That item development approach, with annual pilot testing, continues.

### Protection of the Quality of Assessment Items

Several strategies are used to help ensure that assessment items are valid and reliable. First, item writers are trained to write multiple-choice items. Second, items are pilot tested. Third, items are reviewed repeatedly, both before and after they are piloted.

### Training Item Writers

A major resource used to train item writers is a document titled *Improving Your Test Questions* by John Ory. When the item writing began, Ory conducted a one-day training session. In subsequent years, item writers have viewed a videotape of a presentation by Ory. They receive copies of Ory's document as well as guidelines for writing items for the Illinois fine arts assessment. They record items on forms that list criteria to use to evaluate items before submitting them for further review. Item writers frequently review one another's items using prespecified criteria. They talk informally with one another about the quality of items. The composition of item writing groups is relatively stable over time, changing only gradually. Item writers' skills improve with time, and experienced people help those who are new to the process.

### Pilot Testing

All items are pilot tested with a sample of approximately 250 Illinois students. Statistics generated for each item include the p value (the percentage of students who selected the correct response), the percentage of students who selected each incorrect alternative, point biserial (a correlation between a student's response to a given item in comparison with the total score), and several other indicators. Data are shown for the total group and for each ethnic and gender group.

### Review Items

As mentioned above, assessment items are reviewed numerous times, both before and after they are pilot tested. They will be reviewed again before they are used in statewide tests. Reviewers include Illinois fine arts educators, assessment specialists, and a professional editor (who, coincidentally, has a fine arts background). Criteria for judging an item before it is pilot tested include the item's appropriateness for the designated grade level and goal, its content accuracy, and its technical quality. Items are also reviewed to ensure that they are not biased against specific racial, ethnic, or gender groups. Many, perhaps most, items are revised or moved to another (usually higher) grade level before they are pilot tested. Some are discarded.

After an item is pilot tested reviewers examine data showing the statistical indicators named above. Based on those data, as well as criteria also used during the pre-pilot reviews, reviewers recommend saving items for use in statewide assessment, revising them and pilot testing them again, or discarding them.

### Recommending Items for Inclusion

As 1994 approaches, the process of identifying items which will be included in the statewide tests has begun. Expe-

rienced item writers and reviewers first examined the collection of items and recommended some of them for inclusion and others for exclusion. Then, teachers of the fine arts at the grade levels which will be assessed reviewed the items that had been recommended for inclusion.

### The Involvement of the Fine Arts Educators

As suggested previously, Illinois fine arts educators have been intricately involved throughout the process of developing the state assessment. When the development began, the state department of education appointed a fine arts assessment advisory committee, whose role is to make recommendations about a variety of issues and to be informed about and involved in the entire process. Fine arts educators also write assessment items, review them before and after pilot testing, recommend which items to include in statewide tests, and participate in other tasks.

The educators who have been involved include fine arts specialists who are currently teaching the arts, general classroom teachers who teach the arts, school and district administrators who are involved in fine arts instruction, college and university professors of fine arts, private fine arts consultants, persons from private fine arts agencies, and others. They represent all four arts areas and all of the grade levels that will be assessed, are from all geographic regions of the state, and include members of various racial and ethnic groups. Activities concerning individual arts areas always include specialists in those areas.

Some fine arts educators serve in multiple roles and have been involved for several years, thus enabling them to participate from well-informed perspectives. Others are brought into the process as individual activities occur, allowing them to make fresh contributions.

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### Reflections

Progress in the development of the Illinois state fine arts assessment is readily evident. A relatively extensive collection of multiple-choice items has been accumulated and computerized. Those items have been examined by multiple reviewers and pilot tested with a sample of Illinois students. Their quality has improved noticeably. Also, several important policy decisions have been made--to assess only the fine arts goals that can be assessed validly with a multiple-choice instrument, to aggregate data by arts area, and to investigate the use of videotaped assessment as well as other approaches. However, it has also become obvious that development is a slow, painful, process. Considerable work remains. Items are not evenly distributed across grade levels, arts areas, and goal areas. For example, there are many questions for 8th and 11th graders about music history (major eras, composers, and works of music) but relatively few about how music has changed over time, how music and cultures have influenced one another, or music in non-European cultures. At the lower grade levels, there are many questions about sensory elements such as pitch and dynamics but relatively few good questions about how expressive qualities such as mood and emotion are conveyed. Good tests cannot be constructed until the item bank includes valid and reliable items for all goals and arts areas for each grade level that will be assessed.

Too many items require simple factual knowledge such as the name of an instrument, the interpretation of a musical symbol, or the composer of a major work. Not enough items require students to synthesize knowledge or use other higher-order thinking skills. Ironically, good items that assess factual knowledge are more likely to survive statistical tests and scrutiny by reviewers than items that seem to more validly assess students' skills in analyz-

ing or creating artworks, or their knowledge of how to compose an artwork. In the former, the correct response is seldom controversial and distractors that are parallel and equally attractive to students can be written more easily. For example, it is much easier to write a good multiple-choice item about instruments included in a string quartet or the composer of a specific major symphony than how a singer might use dynamics to convey a particular mood or emotion.

The involvement of fine arts educators has been critical to the success of the development process. Much of the work could not have been done without them. Their expertise and experience have directly improved the validity and quality of the assessment.

The repeated reviews and revisions have also been critical. Although it is sometimes discouraging when items must be revised and pilot tested several times, despite the multiple reviews by practicing educators and assessment specialists, this process has improved the items considerably.

As might be expected, fine arts educators have had some serious concerns about fine arts assessment since they first learned that the reform legislation required it. The concerns seem to center around the dearth of valid tools and resources for assessing student achievement in the arts, the limited usefulness of traditional assessment tools, and the threat that fine arts instruction would be constrained or narrowed through inappropriate use of the tools. However, those concerns are balanced by a realization that assessment might help the fine arts become a more basic component of the curriculum. It is believed that school administrators and board members may be willing to devote more resources to fine arts education if achievement data in the arts are collected and made available to the public. Furthermore, as educators have learned about fine arts assessment and how it will be implemented in Illinois

they have become less fearful that it will be misused.

Indeed, many fine arts educators have become very supportive of the assessment. In addition to helping with the state assessment development, they provide information and assistance to others about both state and local assessment. They make presentations at workshops, serve as private consultants, and develop assessment tools which they share with others. One advisory committee member has organized symposia where dozens of arts educators have heard presentations by nationally known scholars (such as Brent Wilson and Elliot Eisner) and attended workshops on local assessment development.

A dilemma that assessment developers have encountered repeatedly concerns the difficulty level at which assessment items should be written. Most fine arts educators agree that, at the present time, students will perform poorly on items that assess the state goals. Few schools have strong fine arts programs. Assessment results are expected to indicate that schools need to strengthen those programs. Therefore, it is expected that scores will be relatively low and schools will have something to "reach" for, thereby improving fine arts education. However, it is feared that if the tests are too difficult schools will perceive the goals as so unrealistically high that attempting to meet them would be fruitless. On the other hand, if the tests are too easy schools will get the impression that they either already meet the goals or can do so with a few simple improvements.



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# Evaluating the Southeast Institute for Education in Music

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### Introduction

In 1988, the Lyndhurst Foundation funded the formation of the Southeast Institute for Education in Music on the campus of the University of Tennessee at Chattanooga (UTC). The purpose of the Institute was to implement the concepts of discipline-based art education in music. The result was the formation of the first large-scale funding of a project to develop and implement discipline-based music education (DBME). The Institute is one of three which received funding on the UTC campus under the umbrella of the Southeast Center for Education in the Arts: art, music, and theatre. The larger function of the Center is to serve children, educators, parents, and others in the Southeastern United States with discipline-based arts concepts.

The original project director for the Music Institute was Dr. William Lee, a faculty member in the UTC Music Department. Dr. Lee contacted this writer to develop and implement an evaluation plan for the Institute during the 1988-89 academic year. The purpose of this report is to describe the development and evolution of the ongoing evaluative activities of the Southeast Institute for Education in Music.

### Evaluation Requirements

The evaluation of the Institute continues to be based on the original 1988 grant proposal. In this proposal, both formative and summative evaluation strategies are mandated. The project must continuously conduct formative

evaluation to monitor its development, implementation, and operation. The formative evaluation results are to be used in determining program continuation, modification, or termination. The goal of the summative evaluation is to provide a retrospective synthesis of project events for use by external agencies. These agencies are to be provided with sufficient information to determine the efficacy of initiating, developing, or refining a similar program.

The proposal made several requirements of the evaluation. 1) Each project component was to be addressed by the evaluation activities each year of the grant. 2) The evaluation strategies must provide sufficient information to the project decision makers so that prompt informal revision of Institute activities could be made. 3) The evaluation was to include both "goal directed" and "goal free" evaluation techniques. 4) Multiple measurement procedures were called for in all data collection activities. 5) All data were to be consistently collected, promptly tallied, and regularly reported. 6) The proposal required in-school evaluation of the project's influence on music teaching and learning.

### *"Goal Directed" and "Goal Free" Evaluation Techniques*

The writers of the original grant proposal were concerned that evaluative activities which focused on specific outcomes, "goal directed" evaluation, could potentially miss other important outcomes of discipline-based music education. The "goal free" concept

maintained that holistic observation of outcomes should be a part of the evaluation efforts so that all important outcomes would be documented. The strategy has been to incorporate aspects of both techniques in the evaluative efforts whenever possible.

### *Assessment Modes*

Three modes of assessment were called for by the 1988 grant proposal: naturalistic, objective-oriented, and expertise-oriented. Naturalistic assessment was to be flexible in its approach to collecting and analyzing information. This assessment mode was to use less fixed and content-bound data collection strategies in order to obtain observational information that may be unique to the musical art. That is, unobtrusive observation techniques that have minimal impact on the activity being evaluated were to be an integral part of the evaluative effort.

Objective-oriented assessment was to be based upon the strict and objective measurement of a priori specified goals and objectives. This, the proposal writers felt, would provide the strictest and hardest documentation of the project. Because of the sequential nature of discipline-based arts education curricula, it was envisioned that curricular goals and objectives could be readily articulated.

Expertise-oriented assessment called for the use of recognized professional experts in evaluating aspects of the project. Incorporating the insight of such experts was to provide a national level benchmark by which the project could be evaluated. This was to provide a safeguard for the project becoming too parochial in nature.

### *Elements to Be Evaluated*

The project has existed for three years. As can be seen in Table 1, there was a dramatic increase in the number of major elements that required evalu-

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ation between the first and second years of the project. The Institute contracts with school districts for their participation in the project. The school district is to send teams of teachers, administrators, and music specialists who obtain training from the Institute and then implement what they have learned within their schools. The ideal team is one in which all members come from the same school and consists of the principal, classroom teachers, and music specialist. As can be seen, secondary teams are problematic in that secondary teachers tend to work more in isolation by subject matter than do elementary teachers.

The major aspects of the project requiring evaluation are depicted in the time line presented in Figure 1. The primary annual aspect of the project is the Summer Institute. The Summer Institute is three weeks in duration. In the first two years, there were three tracks during each Summer Institute: instrumental secondary, choral secondary, and elementary. More recently, the 1991 Summer Institute focused on the elementary level. The Summer Institute is where the teacher teams have their initial contact with the Institute and receive the bulk of their training. The Summer Institutes are followed with renewal experiences during the fall and the spring of each academic year. For two years following a teacher's initial summer experience, the teacher is to attend a one-week

summer renewal. Toward the end of each academic year, participants are mailed a year-end survey to determine their perceptions of the project and their implementation of it. Through-

still no such definition. One of the first activities was to develop a definition in conjunction with the project director. The definition has gone through numerous modifications since that time.

During the past year, the first center director, Dr. Jeffrey Patchen, was brought on board as well as a new project director, Dorothy Kittaka. This brought about a major reshaping of the definition of DBME.

Earlier it was pointed out that one of the assessment modes was that of objective-oriented assessment. Without a formally stated definition of DBME, the development of concrete curricular objectives was

virtually impossible. Therefore, the evaluation strategy focused on those objectives specified in the original grant proposal (Table 2). These goals and objectives provide great latitude in how the evaluation is implemented.

### Summer Institute

The Summer Institute is evaluated through a number of techniques. A pretest and a posttest survey which measures attitude toward DBME is administered at the beginning and end of the three-week experience. The attitude surveys consist of 14 Likert-type items such as "I am committed to implementing Discipline-Based Music Education in my school" and "The goals of Discipline-Based Music Education are important for educa-

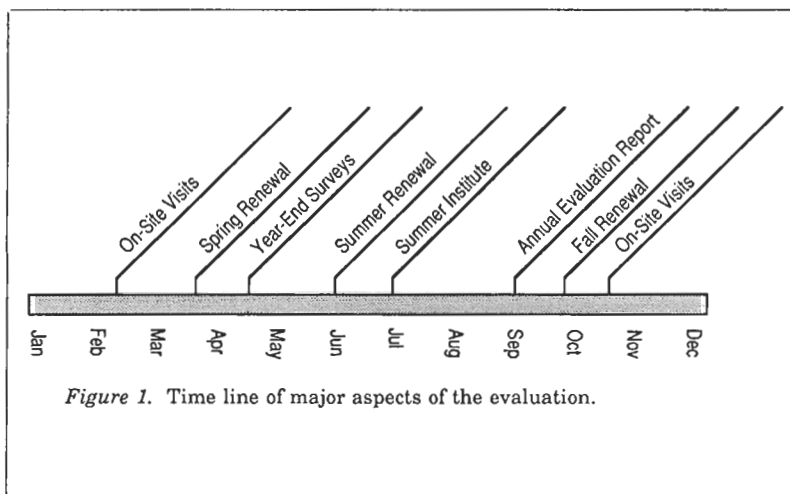


Figure 1. Time line of major aspects of the evaluation.

out the year on-site evaluations are made.

### Implementation

An ongoing difficulty for the evaluation efforts has been the lack of a concrete definition of DBME. There was no substantive definition of DBME in

Table 1  
Evaluation Elements

1989	1990	1991
Summer Institute Fall Renewal	On-Site Evaluations Spring Renewal Year-End Survey Summer Renewal Summer Institute Fall Renewal	On-Site Evaluations Spring Renewal Year-End Survey Summer Renewal Summer Institute Fall Renewal

the initial grant proposal and, when this evaluator arrived on-site a week prior to the first Summer Institute, there was

"The goals of Discipline-Based Music Education are important for educa-



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tion." A response to each item is made using the categories of strongly agree, agree, disagree, strongly disagree.

Participants are administered daily evaluation forms during the final 10 minutes of each day. The evaluation forms consist of 4-point scales to rate each of the sessions offered that day. Two items were used to assess each session: "The presentation was" excellent, good, fair, poor; and "The material covered was" very important, important, not important, not important at all. A final open-ended item included on each daily evaluation form was "Please identify things that we could have done today to make your experience better."

The evaluator attends sessions and "hangs out" in the hallways between sessions to listen to comments made by the participants. Individuals and groups of participants are frequently prompted with questions such as "What did you think of the last session?" and "Was it worth it?" to get candid verbal feedback about the sessions. In addition, participant feelings toward the Institute's activities are solicited. Institute staff who had attended particular sessions are asked their opinions of what they saw and heard.

Presenters are asked to complete their own evaluation forms. The presenter forms consist of four open-ended questions: 1) "How effective do you feel your involvement with the Institute has been?" 2) "What could the Institute have done to make your involvement more effective?" 3) "Overall, what is your perception of the Institute's effectiveness in implementing discipline-based music education?" and 4) "What suggestions can you make for enhancing the Institute's effectiveness

responses of these individuals, most of whom are prominent national figures in their respective areas, constitute the bulk of the expertise-assessment mode called for in the original grant proposal. During their stay, presenters with expertise related to an aspect of the project are asked their perceptions of the Institute's efforts in that area. Responses are then used in determining the effectiveness of the Institute in that area.

During the past two years, a demographic survey has been administered during the Summer Institute. The information requested in the survey has been of great importance to the Center Director and the Project Director

in their presentations to the funding agency, in the recruitment of participant teams, and in reporting to other agencies and authorities. The survey consists of a variety of item types that range in content from questions about ethnicity to questions about where the educators obtain funding for teaching the arts.

*Summer Renewal*

The one week Summer Renewal is evaluated in a similar manner to the Summer Institute. In this case, pre and post attitudinal measures are not applied.

Rather, a single measure with the same

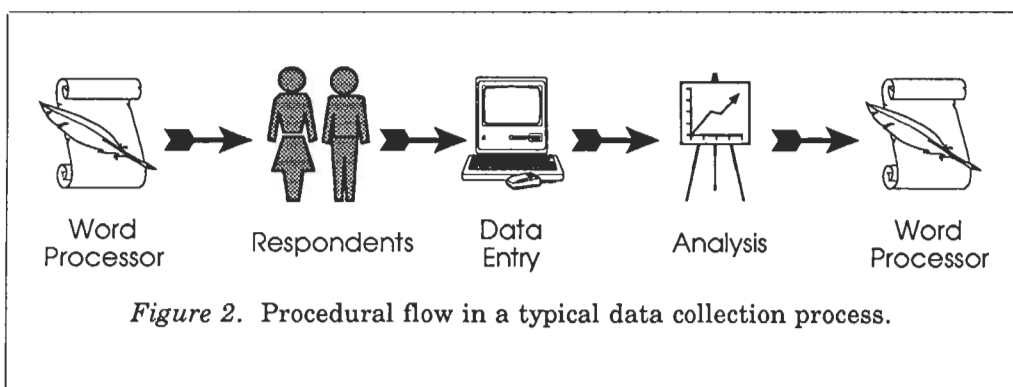


Figure 2. Procedural flow in a typical data collection process.

in implementing discipline-based music education?" A final four-point rating scale is "Check below your perception of the overall quality of the Southeast Institute for Music in Educa-

Table 2

*Goals and Objectives from the Original Grant Proposal*

**Overall Goals**

Guide and assist generalist classroom teachers, specialists in music, administrators, school board members, and trustees in understanding and promoting the goals of discipline based music education throughout the target region.

The student who emerges from this educational base will be able to better understand, value, discuss, differentiate and make judgements about the unique heritage and continuing evolution of musical forms.

**Southeast Institute for Education in Music**

Provide a climate for learning to extend the understanding of classroom teachers, music specialists, school administrators, board members, and trustees of the inherent values of a sequentially based curriculum and implementing such a program in their school system.

Produce written and audio-visual materials to be used by the participants in the Institute.

Develop specific teaching resources to be used by Institute participants.

Enable the schools to increase understanding of the southeast region's unique musical heritage.

Provide leadership in the development of state and local curriculum guides.

Ensure that the values and ideas expressed through an understanding of the DBME components are a part of each child's educational heritage: history, aesthetics, criticism, and performance.

Developing an assessment and evaluation program to assist in the successful curriculum implementation of discipline based education.

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items asks the respondents to provide their current attitudes toward DBME and the Institute.dd

### Spring and Fall Renewals

Evaluation forms are administered to all fall and spring renewal participants at the conclusion of the day's activities. The fall and spring renewals are usually day-long affairs and the teachers get release time from their districts to attend. The evaluation forms evaluate each of the sessions, as in the daily Summer Institute evaluations, and include items which the Center Director and the Project Director also deem important.

### On-Site Evaluations

On-site evaluations are performed by the evaluator during the school year. These evaluations consist of visiting the school, talking with participants who teach in the school; the school principal, and other teachers; and attending music and other classes which use music. Most schools that have embraced the Institute's concepts have numerous bulletin boards, display cases, and other obvious signs of the Institute's impact. It is not unusual to be walking down a

hallway to visit a classroom and hear another class involved in DBME musical activities even though that class is not to be visited. It should be pointed out that while the school is notified that the evaluator will be coming, notice is given with little lead time so that the school will not do any special prepara-

### Year-End Survey

The year-end survey is designed to determine how many students are being impacted by DBME and the effectiveness of DBME in schools. The survey is mailed to past participants in the

Summer Institutes. The survey consists of 25 items, four of which are open-ended questions. The items range from "How many students have you involved in DBME activities?" to "What impact has DBME had on the total school environment?" Two open-ended questions take a retrospective look at the Summer Institute by asking the partici-

pants to list what has been the most valuable and the least valuable to them in their teaching. The other two open-ended questions focus on what knowledge the teachers feel is most important in training others to be successful in their implementation of DBME.

### Analysis

A tremendous amount of data is collected through the measurement and observation procedures. The analysis of these data targets the evaluation goals outlined in the original grant proposal. Most recipients of the compiled evaluation information are not statisti-

Table 3

Example Summer Institute Item and Item Reporting

2:00 - 3:00 Tom and Joe Hicks, <i>The mountain dulcimer: its history &amp; use</i>			
The presentation was			
<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Poor
The material covered was			
<input type="checkbox"/> Very Important	<input type="checkbox"/> Important	<input type="checkbox"/> Not Important	<input type="checkbox"/> Not Important At All
2:00 - 3:00 Tom and Joe Hicks, <i>The mountain dulcimer: its history &amp; use</i>			
The presentation was			
Alternative	Frequency	Percent	
Excellent	22	85%	.....
Good	4	15%	...
Fair	0	0%	
Poor	0	0%	
	26		
The material covered was			
Alternative	Frequency	Percent	
Very Important	21	81%	.....
Important	5	19%	...
Not Important	0	0%	
Not Important At All	0	0%	
	26		

tion. After the on-site visit by the evaluator, a detailed narrative report is made of what was observed.

This year, the project director and the evaluator developed an observation form that the project director could use when visiting schools. The form is designed to be applicable in any of the school environments which might be visited, yet targets specific concepts that are important to DBME. This was done to reduce evaluation costs and to provide the project director with a simple, convenient method to observe Institute activities in the classroom.



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cally sophisticated. As a result, descriptive statistics are emphasized with significance tests, both parametric and nonparametric, applied when appropriate. Graphic presentation of data is done whenever possible. The object of all analyses is to present data in a manner that is efficient in its computation, easily understood by the recipients, meaningful to the goals of the project, and aligned with the evaluation criteria specified in the grant proposal.

The statistical analyses are performed using the Wingz spreadsheet platform on Macintosh computers (Informix, 1988). In most cases, the analyses are done using the StatS statistical extension for Wingz (Asmus, 1990). Wingz provides an environment that allows for rapid data entry, development of custom data

entry forms, programmability of repetitive tasks, and good quality graphic displays. Another feature that is frequently employed is the ability to send analyses to text files for use in word processors.

The typical data collecting process is depicted graphically in Figure 2. A word processor is used to prepare the data collection instrument to which the participants respond. All responses are made on the data collection instruments. This information is entered into a spreadsheet specially formatted for the particular data set. The statistical

analysis is performed on the data entry spreadsheet. Any graphic displays are prepared and the material is output as a text file to be picked up again by the word processor. In most cases, the original data collection instrument file is used as the basis for presenting the data results.

manipulate the next day's activities to better meet the needs of the participants.

A sample of how one session is evaluated is presented in Table 3. Notice how the word processing file used to create the original evaluation form is used as the basis for the daily report. All frequency counts, percentages, and the bar graph are produced within

Wingz. The program which performs the analysis was developed by the evaluator using StatS as an engine. A summed daily score for the participants' perceptions of the presentation and the importance of the material are calculated. These are used in the production of a graph that charts the global daily perceptions of the participants (Figure 3).

*Occasional Measurements*

Other measurement instruments that require statistical analysis are also analyzed using Wingz and StatS. When required, other statistical platforms are used, but for most analyses the spreadsheet-based system is more than adequate. The analyses are performed either on-site or are mailed to the evaluator.

Besides descriptive statistics, the evaluator monitors the effectiveness of all measurements through the calculation of Cronbach alpha reliabilities and appropriate item-analysis statistics. The reliability indices have been quite good. The items are all written in a

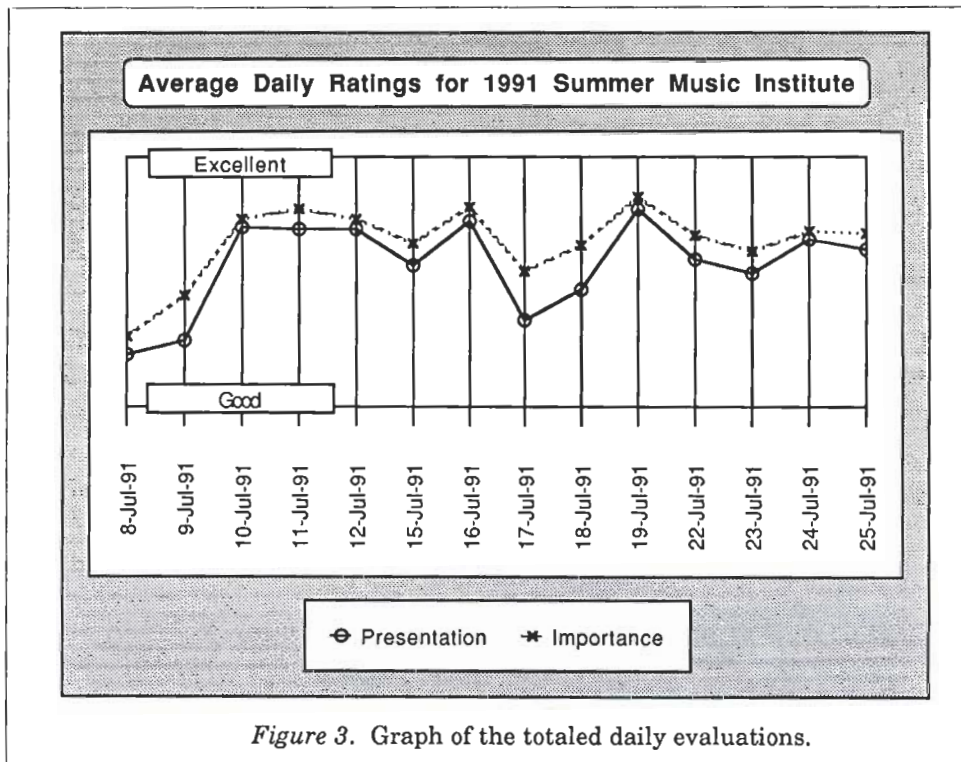


Figure 3. Graph of the totaled daily evaluations.

*Daily Evaluations*

At the completion of each day during the Summer Institute and Summer Renewals, the daily evaluation forms are administered. The completed evaluation forms are submitted to the analysis sequence that is detailed in Figure 2. The entire daily analysis process has been programmed. The result is that within 30 minutes of the end of the day's formal activities, the Center and Project Directors are provided with an analysis of the participants' perceptions of the day. This provides the directors with information that allows them to

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straightforward manner. That is, they focus only on information which is important to the evaluative effort, and each item targets only one psychological object. This eliminates any need for more in-depth analysis of the psychometric properties of the instruments and keeps the reporting of results from becoming convoluted.

*Annual Evaluation Report*

The largest evaluation task during the year is the preparation of the annual evaluation report. The report is prepared as a permanent archive of the year's activities. It provides the summative assessment of all the Institute's activities during the past year and is used as a primary source for the Institute and

Center Directors' annual reports to the funding agency. Included in the appendices of the report are the statistical reports of every measurement instrument, which include typed responses to the open-ended items by the participants. The appendices also include all typed in-school observations and the typed responses of each presenter.

The report begins by describing the evaluation. This is followed by demographic information about the participants and the students being reached by the project because of this information's importance to the funding

agency. The various data collection strategies are described with major findings presented in a summarized form. Included in this presentation is an analysis of the staff, facilities, and university support services. A detailed analysis of the goals and objectives defined in the original grant proposal (Table 2) is provided based on the current year's activities and information col-

used to present the level of goal attainment in as clear a manner as possible.

**The 1991/92 Evaluation**

The 1991/92 evaluation is incorporating more of the objective-oriented assessment called for in the original grant proposal. This was made possible because definitive documents that

characterize DBME have been developed by the Center Director, the Institute Director, and the Evaluator. These documents provide the basis for the development of targets that the Institute is to attain. That is, all activities of the Institute should be directed to attaining DBME as characterized in these documents.

The targets evolve directly from the 12 Characteristics of Quality Discipline-Based Arts Education Programs

Characteristics of a Quality Discipline-Based Arts Education Program	Characteristics of a Quality Discipline-Based Music Education Program
1. A long-range planning committee for the arts is in place to address program development.	1. A long-range planning committee for the arts including music is in place to address program development.
2. The local school board has in place a policy statement and/or goals and objectives for student learning that include the arts.	2. The local school board has in place a policy statement and/or goals and objectives for student learning that include music and the arts.
3. A written sequential K-12 curriculum exists for music, visual arts, and theater arts.	3. A written sequential K-12 curriculum exists for music.
4. For each arts offering, students are engaged in study which focuses on history, critical analysis, and aesthetic characteristics as well as performance or production.	4. For each music offering, students are engaged in study which is derived from the four disciplines of music: production (composing and performing), music history, aesthetics, and criticism.
5. An arts education program evaluation is conducted annually with results reported to administrators, school board, parents and the community.	5. A music and arts education program evaluation is conducted annually with results reported to administrators, school board, parents and the community.
6. The arts are taught by qualified staff.	6. Music is taught by qualified staff.
7. Adequate resources are in place which support and enhance the quality of arts education in grades K-12.	7. Adequate resources are in place which support and enhance the quality of music education in grades K-12.
8. All students have access to school-sponsored live arts experiences as part of the in-school arts curriculum.	8. All students have access to school-sponsored live music experiences as part of the in-school music curriculum.
9. The arts are integrated into the general curriculum.	9. Music is integrated into the general curriculum.
10. Students with special needs are identified and provided with arts instruction in all arts disciplines and at all levels.	10. Students with special needs are identified and provided with music instruction at all levels.
11. The arts education program is administered and coordinated at the building and district level.	11. The music education program is administered and coordinated at the building and district level.
12. The school uses appropriate arts learning resources in the school and community.	12. The school uses appropriate music learning resources in the school and community.

Figure 4. Twelve characteristics of quality discipline based programs in the arts and music.

lected. Goal and objective attainment are contrasted with the previous year's recommendations. This is followed by recommendations concerning the staff, facilities, Summer Institute, and other aspects of the Southeast Institute for Education in Music operations.

The report is written using straightforward language that should be understandable by the diversity of constituencies who might read it. The visual presentation strives for clarity with graphic displays of the data being included whenever possible. In analyzing the goals, a numerated list format is

programs (Figure 4), delineated in the Strategies for the Development of Effective Long-Range Plans for Discipline-Based Arts Education Programs (SCEA, 1991), which have been modified to be specific to music. All Institute activities should serve to promote one or more of these 12 characteristics. From the characteristics and written documentation of Discipline-Based Arts Education, the Discipline-Based Music Education Overview (SIEM, 1991a) was developed. This review succinctly describes DBME and relates it to the field of music education. Ele-



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mentary Level DBME Implementation Expectations (SIEM, 1991b) were derived from the above to define various expectations for the classroom teacher and the music specialist when implementing DBME. Finally, Characteristics of the Model DBME Lesson (SIEM, 1991c) were developed to describe in specific terms how each DBME component can be identified within the context of a DBME lesson. It also specifies how the various components of DBME can be partitioned during the lesson. Potential lesson components extracted from the document are presented in Table 4.

**Toward the Future**

The DBME project of the Southeast Institute for Education in Music has necessarily involved a significant amount of research and development activity. The concepts of DBME are now being articulated in a manner that will allow a more vigorous objective-oriented approach to evaluation which directly involves student learning. It has been difficult for the Institute to identify presenters and others who are willing to modify their perceptions of music education to adapt the concepts of DBME. The Institute has laid the groundwork for making significant strides in implementing true DBME in the schools rather than only those DBME concepts that are congruent with past practice. The Institute has impacted schools in Tennessee and Georgia to date, but with the firming of the DBME concepts and the vigorous leadership of center director Jeffrey Patchen, numerous school districts

throughout the southeast have expressed interest in participating in the Institute's activities. As the Institute's activities increase and broaden throughout the region, the evaluative effort will become larger and more complex. It will be necessary to modify existing evaluative practice to assure

tion Programs. Chattanooga: Southeast Center for Education in the Arts.

SIEM. (1991a). *Discipline-Based Music Education Overview*. Chattanooga: Southeast Institute for Education in Music.

SIEM. (1991b). *Elementary Level DBME Implementation Expectations*. Chattanooga: Southeast Institute for Education in Music.

SIEM. (1991c). *Characteristics of the Model DBME Lesson*. Chattanooga: Southeast Institute for Education in Music.

**Editor's Desk**

Readers are requested to submit ideas for articles in evaluation at sites where exemplary music evaluation practices are employed. Of special interest is the use of portfolios. Possible topics include: grading

or evaluating the portfolios, aggregating the data, weighting data within the portfolio, using portfolios effectively for more than performance objectives, establishing any validity or reliability, determining cutoff scores, and usability when a teacher meets several hundred students a week.

Table 4  
*Possible Discipline Based Music Education Lesson Components*

Production	Aesthetics
<u>Composition</u> <ul style="list-style-type: none"> <li>• Creating</li> <li>• Improvisation</li> <li>• Listening</li> </ul>	<u>Nature and Philosophy</u> <ul style="list-style-type: none"> <li>• Characteristics that make the work music</li> <li>• Determination of quality</li> <li>• Relating to other music</li> </ul>
<u>Performance</u> <ul style="list-style-type: none"> <li>• Development of technique and artistry</li> <li>• Recreating heard sounds</li> <li>• Recreating from notation</li> <li>• Improvisation</li> </ul>	<u>Personal Reaction</u> <ul style="list-style-type: none"> <li>• Feelings in reaction to the music</li> <li>• Identification of why those feelings were developed</li> <li>• Determination and basis of personal preference</li> </ul>
<u>History</u>	<u>Criticism</u>
<u>Historical Context</u> <ul style="list-style-type: none"> <li>• Place within world history</li> <li>• Place within music history</li> </ul>	<u>Perceiving, Describing, and Analyzing</u> <ul style="list-style-type: none"> <li>• Explanation of work</li> <li>• Form and style</li> </ul>
<u>Cultural Context</u> <ul style="list-style-type: none"> <li>• Who, when, where</li> <li>• Cultural characteristics related to piece</li> <li>• Function of the piece within the culture</li> <li>• Changing cultural function of the piece over time</li> </ul>	<u>Interpreting, Evaluating, and Defending</u> <ul style="list-style-type: none"> <li>• Identification of the representativeness and excellence of the work in terms of its production, history, and aesthetics</li> <li>• Rationalizing positions taken about the work in terms of its production, history, and aesthetics</li> </ul>

that appropriate information will be efficiently collected from the diverse population that will be served.

**References**

Asmus, E. P. (1990). StatS [Computer program]. Palm Desert, CA: Spreadware.

Informix. (1988). Wingz [Computer program]. Lenexa, KS: Author.

SCEA. (1991). *Strategies for the Development of Effective Long-Range Plans for Discipline-Based Arts Educa-*

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*Address Correction  
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**Attention: Richard Colwell & Robert Ambrose, Editors**