DOCUMENT RESUME

ED 441 737 SO 031 796

AUTHOR Mills, Susan W.
TITLE The Role of Musical Intelligence in a Multiple Intelligences Focused Elementary School.
PUB DATE 2000-00-00
NOTE 20p.
PUB TYPE Reports - Research (143)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Educational Research; Evaluation Research; *Multiple Intelligences; *Music Education; Primary Education; *Student Evaluation
IDENTIFIERS Florida (Central); Gardner (Howard)

ABSTRACT

The role of musical intelligence was investigated in grades K-3 at a central Florida elementary school. Teachers implemented the Theory of Multiple Intelligences (MI) of Howard Gardner in elementary curricula. The guiding question in this research was: What, if any, musical growth takes place as a result of a MI curriculum? The extent and quality of musical experiences, corresponding assessments, and comparison with representative schools from MI literature were examined through case study data collection methods. Only one assessment for musical growth and one assessment for musical ability was found in the MI literature. No such assessments were present in the school setting. Influences on the role of musical intelligence included perceptions about MI, music integration, musical growth, assessment of musical growth, and assessment in general. Political climate at the school and district also were cited as highly influential in determining the role of musical intelligence in the school's MI curriculum. (Contains 25 references.) (Author/BT)

# The Role of Musical Intelligence in a Multiple Intelligences focused Elementary School

Susan W. Mills

University of Central Florida

## Abstract

The role of musical intelligence was investigated at a Central Florida elementary school. Teachers implemented the Theory of Multiple Intelligences (MI) by Howard Gardner in elementary curricula. Extent and quality of musical experiences, corresponding assessments, and comparison with representative schools from MI literature were examined through case study data collection methods.

Only one assessment for musical growth and one assessment for musical ability was found in the MI literature. No such assessments were present in the school setting. Influences on the role of musical intelligence included perceptions about: MI, music integration, musical growth, assessment of musical growth and assessment in general. Political climate at the school and district were also cited as highly influential in determining the role of musical intelligence in the school's MI curriculum.

# Introduction

The educational reform movement of recent years has spawned the search for innovative approaches to teaching. One theory that has impacted the design of many schools and curricula is the theory of Multiple Intelligences (MI) posited by Howard Gardner (1983). This theory suggests that there are several human intelligences which are relatively independent of one another and can be fashioned and combined in a multiplicity of adaptive ways by individuals and cultures. Schools have been reformed and, in some cases, created to include teaching methods and learning activities and assessments suggested in literature about MI theory.

Although Gardner did not posit this theory with the intent that schools would embrace it as a basis for comprehensive school reform, many have done so. At this point, little attention has been paid to questions of whether the development of musical intelligence is being thoughtfully addressed by teachers or even recognized or desired by parents or children involved in MI programs.

Music educators and other stakeholders have cause for concern because music has often been marginalized in the public school curriculum of America. Teachers in MI schools may be enhancing the growth of musical intelligence in a conscious and effective way; however it is also possible that their practices do little to enhance such growth. Should the latter be true, then it should be imperative that schools based on the theory of Multiple Intelligences supplement the musical training of children by work with specialists so that adequate growth is accomplished.

Without assessment, there is no way of knowing whether music activities are helpful, harmful or ineffective for musical growth in MI schools. The purpose of this study was to examine the question of the extent and quality of musical activities designed to stimulate the use of musical intelligence by children in grades Kindergarten through three in one MI school in Central Florida.

## Research Design

The guiding question in this research was "What, if any, musical growth takes place as a result of an MI curriculum?" The extent and quality of musical activities designed to stimulate the use of musical intelligence by children in grades Kindergarten through three at one MI school in Central Florida were examined. Data sources included two prior studies undertaken by the researcher, and information provided by participants in a Central Florida MI school compared with fifty-five books, articles and essays (Wilson, 1999) written about the theory of Multiple Intelligences since it's inception in 1983 (MI literature) until the study was completed in 1999.

In an initial study, Central Florida elementary MI schools were identified and placed into four categories of curricular design models identified by Campbell, Campbell and Dickinson (1999). A second prior study focused on one of those schools, code named Trailblazer, which represented a Multimodal design focusing on the multiple intelligences as entry points into disciplinary content. Multimodal design is common in new or newly adapted MI schools.

In the third and final study, the perceptions of teachers, parents and students were investigated to provide insight about the role of musical intelligence in four participating classrooms at Evergreen School (code name), another Multimodal MI setting. Information provided by the three groups of participants was compared with the information about music learning and assessment from MI literature.

In order to find evidence of musical growth, three related research questions were formulated. These questions were asked in the context of MI schools, defined as a school that has a curriculum inclusive of teaching methods and learning activities based on the theory of Multiple Intelligences by Howard Gardner, or based on subsequent work grounded in Gardner's theory.

Data were collected through case study methodology using interviews, observations, artifact review and a questionnaire for parents and teachers. Analysis of data included coding of interviews,

observations and follow-up discussions using a contact summary sheet and a document summary sheet for artifacts. Field notes, a researcher journal, and all documents were examined for patterns of perception, behavior and teacher theorizing. The questionnaire was analyzed for frequency and percentage of item response and individual items were reviewed by participating teachers for explanation of patterns and trends. Triangulation of all data completed the analysis in the form of a naturalistic (Smith, 1990), descriptive report (Wilson, 1999).

## Research Questions

*1. What assessments for musical growth can be found in the literature?*

MI literature was examined for content inclusive of comments about both musical intelligence and music assessment (of any kind). The majority was intended to provide practical ideas for implementing MI theory in the elementary classroom. The intended audience was elementary educators.

*2. What are MI parents', students', and teachers' perceptions of musical growth?*

The question required an examination of the music activities and assessments, if any, at Evergreen School. Fifty-four parents or sets of parents provided information about their perceptions of musical intelligence and learning on a researcher developed questionnaire. Teachers and the school principal provided artifacts such as lesson plans, tape recordings and word sheets to songs for researcher analysis. Each teacher allowed several observations of music activities and other learning tasks and participated in three or four interviews. Their classrooms became the social settings in question and their responses to interview questions formed the basis for focusing the data.

Students participated in music activities during class observations. In addition, fifteen students were individually interviewed and asked about their music activities and their thoughts on music learning. Their responses and behaviors became the basis for analysis of student perceptions at Evergreen School.

Perceptions of musical intelligence as a construct, musical growth and assessment of musical growth were specific areas of inquiry included in the study. Students, teachers and parents contributed conflicting information, at times. The researcher compared information provided by the participants with observed behaviors and artifacts. These comparisons formed the basis for interpreting the data.

*3. How are the assessments provided by the representative models in MI literature demonstrated in existing Central Florida schools?*

This question called for a comparison of the music assessments in the MI literature and the participants' perceptions about the role of musical intelligence in the curricula. Perceptions about MI theory, music integration, musical growth, assessment of musical growth and the school's political climate were all important areas of study and findings. Since formal assessment practices did not exist, perceptions were examined for insight into the value teachers hold for music activities and experiences.

Practices in music in an existing Central Florida MI school were compared to the representative model MI schools in educational literature across several factors. Those factors include: amount of time spent on music activities, use of assessment rubrics or other instruments, types of activities, selected, (i.e. instrumental improvisation, listening to music recordings); and teacher experience and training. Further investigation into teachers' experience with MI training;

teachers and parents understanding of MI; and students' teachers' and parents' perceptions of musical intelligence was used to complete the portrait of music learning in an MI school.

## Findings

### MI Literature and Assessment of Musical Growth

Although assessment is a key component of MI (Gardner, 1993), a review of existing literature suggested confusion over the assessment of musical intelligence. In the theory of Multiple Intelligences, Gardner's view differed from earlier theories about intelligence, because his theory included the idea that intelligences can be developed through schooling (Gardner, 1983). Therefore, musical intelligence is more than an innate ability, and would logically require some evaluation or measurement of progress for purposes of quality and accountability.

Very few studies focusing on music activities and their corresponding assessments were evident in MI literature, yet suggestions of music activities often appeared in accounts of and articles about MI learning. Gardner did not advocate assessing every lesson or intelligence without regard to context or content. "The intelligences must be seen at work when individuals are carrying out productive activities that are valued in a culture" (1995b p. 207).

Rubrics for musical assessment generally focused on assessing students' utilization of music to master non-musical content (e.g. Bellanca, Chapman and Swartz, 1994; and Campbell et al., 1999). Gardner participated in Project Spectrum, a research study designed to determine whether young children have distinct profiles of ability that included assessments in music ability (Hatch and Gardner, 1996). The testing did not attempt to measure growth, but was used to examine the influence of context in reasoning process. One other assessment model, The Teele Inventory of Multiple Intelligences was used to demonstrate abilities in dominant intelligences, but not to determine musical growth (Teele, 1996).

One portion of the MI literature included works by music educators or advocates of quality music and arts programs, and featured repeated concerns about the surface applications of music activities, the context of musical learning in integrated and arts-infused settings, and misconceptions about the assessment of musical growth. The placement of these articles in journals such as Teaching Music and Music Educators Journal points to music educators as the intended audience for these writings in most cases (Ball, 1995, Colwell and Davidson, 1996, Kassell, 1998, Hinckley, 1998, Mallonee, 1997, Vincent and Merrion, 1990).

In the MI literature available to and referenced by Evergreen faculty, assessment of musical growth was not established as a viable goal for MI educators who wish to help their students develop their musical intelligence. Even where musical outcomes were expected, such as to "accompany a recorded song with an instrument" (Campbell, et. al., 1999), no measurement or evaluation of that ability or the improvement of that ability is included. Assessments of musical growth, which help to determine the progress of a student's ability to read, perform, create or analyze music were not found in the MI literature from 1983 to 1999.

Perceptions of Parents, Students and Teachers-Musical Activities

Three areas of study were identified as essential concepts in participants' perceptions of musical growth: music activities, assessment of musical growth, and expectations for the role of music in the classroom. Identification and description of music activities were collected via the interviews, artifacts, and the questionnaire.

Parents guessed or assumed that instrumental activities were a regular part of the classroom experience, when in fact such experiences rarely occurred. While parents correctly reported that their children were singing (90%), listening to recorded music (60%), and in some cases responding to recorded music with actions or dance (25%), many parents incorrectly reported that their children

were playing musical instruments (35%). In fact, teachers reported almost no instrumental activities, with only one of the teachers using any kind of musical instruments more than once per school year.

Parents and teachers indicated great value for exposure to a variety of music and music listening as important experiences for developing musical intelligence. Misconceptions about the variety of music and the type of listening experiences were indicated in parent responses and teacher interviews. These two groups reported that their children (students) were engaging in listening activities and that they were listening to a variety of music. Observation and artifact analysis determined that this was not the case, and that teachers and parents did not make a distinction between background music and music listening, and that recordings were usually similar in style.

Teachers placed great importance on the music played in the background during class, called focus music. Teachers played focus music in order to "put children in the alpha state," hoping to improve standardized achievement test scores. During the data collection period, one teacher evaluated her students' writing in the FCAT practice tests and concluded that students were "writing better." After the actual test, the third grade students scored lower than the previous year's third grade class. The teacher attributed the drop in scores to the testing prompt.

During the interviews, teachers provided additional information about the impact of the FCAT tests. The test scores were prioritized by the school principal, and teachers reported changes or limitations in music activities as a result of the new priority.

Students were, by teacher accounts, extremely accurate in naming the musical activities that had occurred during the data collection period. Kindergarten and first grade interviewees did not remember one-time music activities as well as the older children, but did accurately report daily singing, their most frequent musical activity. Older children accurately reported focus

(background) music every day and singing occasionally. Students did not remember titles of songs sung occasionally or seasonally, although they provided much information about the academic content from the songs. All but one child reported great enjoyment for the musical activities and felt that the activities were very important.

Perceptions of Parents, Students and Teachers-Musical Growth

Parents and teachers held vastly different views on how teachers determined what students were learning and to whom this information was provided. Although both groups felt that students were learning musical skills, no formal assessment of students' musical ability or musical growth was used. Only 19% of parents felt that parents were given feedback by the teacher and 26% of parents felt that neither the child nor parents were given teacher feedback on musical projects. All four teachers disagreed and reported that feedback was provided to students, with two of the four reporting that feedback was also provided to parents. Most teachers and parents indicated that they thought children were learning musical skills in their elementary classrooms, although they did not identify specific skills learned. Although neither teachers nor parents addressed musical growth in their comments and answers, their responses to this area indicate that musical intelligence is developed by exposure to a variety of styles and musical experiences.

Students were asked what they had learned from their musical activities. Songs were the richest source of learning for them. Third grade children were specific in their list of academic content learned through the music. Pilgrims, polar bears, animals, recycling, earth care, the diet of Hawaiians, the number of people on the Titanic, and Christmas customs in other countries were all listed. Some children distinguished what they learned musically, from non-musical learning. They often demonstrated their abilities for the interviewer, singing, and naming musical terms such as line and space notes, rhythms, loud and soft sounds. When asked how teachers could tell what

they had learned from their musical activities, only three children were able to answer. One student reported "she can tell by the look in our eyes," while the other two guessed that "she keeps track on a paper or something."

Perceptions of Parents, Students and Teachers-The Role of Music

Answering questions about the importance of music as an intelligence, 57% of parents stated that some of the intelligences are more important than others. This group listed the intelligences they considered to be the more important. Their most frequent choices were verbal (55%) and mathematical (62%) intelligences. Musical intelligence was the fifth most frequent response. While 94% of parents indicated that musical activities should be part of the elementary classroom, their reasons varied greatly. Most common was that music helps children memorize or learn academic content, but parents also cited enjoyment of learning and relaxation as reasons for inclusion. Several parents also stated that music was important because it was in the curriculum. Exposure to a variety of music was parents' most frequent response to what constitutes a valuable music experience, with instrument play as the second most frequent. Parents clearly believed that their children were listening to music and playing instruments regularly in their classes.

Teachers all agreed that it was very important for children to develop musical intelligence, although the common belief was that strengthening one intelligence strengthens the other intelligences. One teacher qualified her answer with this remark. "It may not be as practical as some of the other intelligences. If you work in a factory, you need more verbal and analytical skills. Musical intelligence isn't going to get you that job." This teacher cited verbal and interpersonal as the two most important intelligences, but for her students, logical-mathematical intelligence was important as well, because "the curriculum calls for more mathematical intelligence." Another teacher disagreed with the curriculum, stating that the "musical activities have to be justified

academically because of the benchmarks." In her first grade classroom, development of new music activities ceased due to her understanding of the priorities set at the district level.

## Discussion

The concept of musical growth was defined by the researcher, but never used by teachers unless directly asked. While parents and teachers felt confident that musical skills and knowledge were being learned in the participating classrooms, musical growth was neither identified or evaluated by them. Teachers reported no assessment of musical growth and agreed that there had been no effort to explicitly teach musical skills, yet felt that students had learned musical skills. Student perceptions about assessment of musical growth reflect the emphasis on academic content, even during musical activities. All Evergreen participants appeared to hold vague notions regarding the need to assess all the intelligences. Since assessments in the literature exist only for purposes of measuring ability (Hatch and Gardner, 1996) or for measuring academic content learned (Armstrong, 1994; Bellanca Chapman and Schwartz, 1994, Campbell et al., 1999; Duval and Mark, 1994; Marks-Tarlow, 1996; Smagorinsky, 1995), teachers did not address the content of musical intelligence. Even on the rare occasions where music was involved in assessments, academic content, rather than musical growth was assessed. The omission of assessment rubrics designed to measure musical growth in classrooms could be related to the omission of the same in the MI literature, yet teachers felt that the most influential factor in their decisions about assessment was the current political climate at the school and in the school district.

In the MI literature, one suggestion for background music includes the use of Mozart's music and music at extremely low volumes (Campbell, D. 1998). Such activities are intended to engage the learners in the musical or academic material at hand. The activities involving recorded

music observed at Evergreen School were more passive in nature; primarily focus music. During passive music experiences, no musical skills were required on the part of students.

Parents and teachers named "exposure to a variety of music" as an important experience for students, yet, the music played in classrooms did not reflect this belief. Teachers played the Mozart music frequently, at extremely low volumes, yet children did not demonstrate any knowledge of the composers, titles or stylistic descriptions of background music. Teachers also played what they considered to be educational songs such as "The Silent E Song" and "Alligators All Around." One of the teachers played several varieties of popular music in short excerpts. The Native American Drum beat, as it was identified, was found in one classroom and used to create a sound buffer between the classroom and other nearby classes in the open concept school that had no floor-to-ceiling walls between classrooms. Occasionally, a tape of Baroque music, identified only as "Baroque" was played in two classrooms, also at nearly imperceptible volume levels. Teachers, parents and students did not distinguish listening to music from background or focus music.

Singing, was the most frequent activity, identified as musical. The singing observed in classrooms was always led by the teachers, and in low registers. Using a tuning fork, the researcher determine the approximate pitch range for most songs as the octave from E below middle C, to E above middle C. Developmentally, this range is far below appropriate singing registers for children (Campbell and Scott-Kassner, 1995, p. 128).

Context of Musical Learning

Kathy Kassell, a researcher of music and multiple intelligences, expressed concern that "much of the MI literature suggests exercises that link memorizing academic content with rhythms or simple songs; it suggests that music is simply a tool for enhancing memory." Gardner, (1995b, p. 207) expressed similar concerns about the use of intelligences to drill students, calling such

activities a lack of "genuine or performance understandings, and makes the uses of the intelligences essentially trivial." The inappropriate singing range of Evergreen participants, and the use of music as activities, instead of the context of musical problems or situations are examples of Kassell's and Gardner's concerns represented in the school studied.

Reimer's description of the diverse roles found in the domain of music (1998) affirms the importance of musical context for developing musical intelligence. Even Gardner's critics (Eisner 1994), noted the importance of context in developing intelligences. From the prior study and participating teachers' own accounts, it appears that this portion of MI literature has not reached the audience of elementary teachers who are including music in their MI classes.

While MI literature included some of Gardner's own reflections and revisions of his theory (Gardner, 1995a, 1995b, 1996, 2000; Gardner and Hatch, 1995), most of the theorizing of this type has been left out of mainstream educational journals. None of the concerns from arts educators, the criticism from scholars or the disturbances that Gardner wrote about appear in the MI books for teachers.

In all classes, the integration of music was reported, but did not meet conventional requirements for integrating learning in the arts (Ackerman and Perkins, 1989; Campbell and Scott-Kassner, 1995, p. 376). At Evergreen School, the scheduling of music and art classes taught by specialists was reduced from one 45 minute period per week to one 45 minute period every other week during the study because the principal felt that more time could be spent on academics in preparation for the FCAT tests since teachers were integrating musical intelligence in their classrooms. This decision affected all six grade levels, yet only six classes in the entire school reported inclusion of musical activities more than once per year.

Political Climate

Due a restructuring of personnel at the district level, the priorities set for individual schools were determined by the new district administration. After the restructuring occurred, the training for teachers and support for their MI studies was terminated. Teachers felt that they had to limit the "MI" activities to allow time for more activities that could be justified academically. This seems to represent a failure to perceive the work of MI as a way of approaching academics and a resort to earlier models of teach and test that Gardner was trying to help educators disband. School reform requires significant support from administrators, and a new approach to teaching is a form of school change. Without administrator support for an extended period of time, school change is known to fail.

It is not surprising that administrators, parents and teachers would all be concerned about standardized test scores and the severe consequences of failure. Parents and teachers frequently justified the importance of academic subjects by deferring to the curriculum – one established by their administrators. Their concerns, as well as the fact that they had not been trained to assess growth in all areas of intelligence are as important as their perceptions about musical intelligence. Leaving the teachers to voluntarily implement MI any way they wished, shows a clear lack of commitment to ongoing support necessary for teacher change.

## Conclusion and Implications

The idea of separate musical intelligence is so new for many educators and parents that it is not yet affecting policy change or parent expectation. Administrators are required to serve the higher authority of district leaders and taxpaying citizens, who may be unaware of MI or its impact on the current curriculum. In addition, there seems to be a great deal of confusion about the meaning of musical intelligence. Confusions began with Gardner himself, when he termed musical

intelligence as the ability to produce and appreciate rhythm, pitch and timbre; and appreciate the forms of musical expressiveness (1983). The ability to appreciate may have been interpreted by teachers as a passive concept, that requires no knowledge about music, or development of identifiable musical skills.

Elementary education depends on capable teachers, who seek out effective strategies for teaching and activities for learning. Most teachers in this and the prior study expressed an awareness of the limits of their musical activities and experiences. Some teachers attributed the limits to their own perceived lack of musical intelligence, others attributed the limits to external factors, primarily the role of music in elementary education as a diversion from the more important academic subjects.

Parents are not trained in the subtleties of assessment and rely on teachers' judgements and reporting of their children's progress in school. Internal limitations such as lack of confidence and inexperience with music are directly related to music education as a profession and to its presence in elementary school curricula. If children grow up knowing only passive music experiences, they will eventually find the development of musical ability mystical and impossible. External limitations will prevail. Without the experience of making music and enjoying the purely aesthetic beauty of music as an art, artistic insight, the essential component of musical intelligence is missing. The real external limitation is the lack of realization that the quality of an experience cannot be judged by test scores alone. Both internal and external limitations must be addressed in our schools and in our society for the sake of developing the highest degree of intellect in all children.

Teachers' perceptions of musical growth are complex and are informed not only by their operational learning theories (Wilson, 1999) or backgrounds, but by district and school support of musical growth. Parents' perceptions are likely to be affected by the emphasis voiced by the

school's principal and teachers. Students' perceptions are based on their daily experiences, and largely reflect the perceptions of their parents and teachers. The triangulation of data from all three sources lent consensual validity to the study, however, the small number of participants limits the generalizability of the findings.

In order to transfer some of the research findings to other settings, the development of a survey instrument inquiring about particular conditions in an MI school would be helpful. A survey using the findings from this study of the major factors influencing the role of music could be used as a basis for the questions. Evidence of MI training that includes materials designed by arts educators, appropriate facilities and time allotments for music learning, and commitment to MI from school and district administration are all relevant areas that could be identified through the survey. Results of the study might be helpful in formulation of MI schools and schools that wanted to promote the role of music.

This study provides evidence an ineffective model of musical growth and assessment, as a result of developing elementary curricula based on MI. A label such as Multiple Intelligences attached to a school can only mean something if the label has some reliable assumptions within it. When integration replaces music education with music appreciation or background and theme music, the discipline of the art of music is in danger (Colwell and Davidson, 1996). In order for stake holders and outsiders to evaluate a school as a whole entity, schools need to be able to report student progress in all areas of curriculum and intelligence.

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**e-mail: ericfac@inet.ed.gov**
**WWW: http://ericfac.piccard.csc.com**

EFF-088 (Rev. 2/2000)