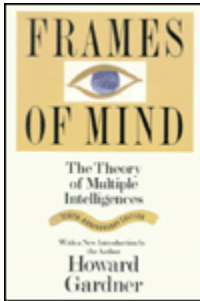


Chapter Three: The Musical Intelligence

Introduction: What is intelligence? (Gardner, Howard. Frames of Mind, 1983)



The theory of multiple intelligences developed by Howard Gardner has significantly influenced education in the last few decades. Gardner refers to the intelligences as ways of knowing and understanding yourself and the world around you. In the introductory section of Frames of Mind, his first popular book on the subject, Gardner defines intelligence as "the ability to solve problems, or to create products, that are valued within one or more cultural settings" (1983). He explains that he was seeking to undermine the common notion of intelligences as a general capacity or potential which every human being possessed to a greater or lesser extent. He questioned the assumption that you could measure intelligence with standardized verbal instruments, such as the short answer, paper and pencil IQ test. He asks his readers to "perform two thought experiments."

- Imagine you have never heard of the concept of intelligence as a single property of the human mind; or that an instrument called the intelligence test exists.
- "Cast your mind widely about the world and think of all the roles or "end states" - vocational and avocational - that have been prized by cultures during various eras (hunters, fishermen, farmers, shamans, religious leaders, psychiatrists, military leaders, civil leaders, athletes, artists, musician, poets, parents, and scientists)"

In Gardner's early research he discussed seven intelligences. Gardner later introduced an eighth intelligence: the naturalist intelligence.

Howard Gardner - <http://www.pz.harvard.edu/PIs/HG.htm>



Verbal - Linguistic



Intrapersonal



Logical - Mathematical



Interpersonal



Visual - Spatial



Musical - Rhythmic



Body - Kinesthetic



Naturalist

Gardner believes that everyone possesses some capacity in all intelligences, but these intelligences function together in ways unique to each person. He proposes that most people can develop each intelligence to an adequate level of competency. Gardner determined the validity of each intelligence by reviewing such factors as the potential impairment of the intelligence by brain damage, the existence of savants and prodigies, a definable set of expert "end-state"

performances, an evolutionary history and plausibility, support from psychological data, an identifiable set of operations, and the use of a symbol system.

For an update from Howard Gardner himself - Multiple Intelligences after Twenty Years - http://www.pz.harvard.edu/Pis/HG_MI_after_20_years.pdf Check out the Project Zero website - <http://www.pz.harvard.edu/Default.htm>



Howard Gardner

"As a young person I was a serious pianist and enthusiastically involved with other arts as well. When I began to study developmental and cognitive psychology, I was struck by the virtual absence of any mention of the arts. An early professional goal was to find a place for the arts within academic psychology. I am still trying! In 1967 my continuing interest in the arts prompted me to become a founding member of Project Zero, a basic research group at the Harvard Graduate School of Education begun by a noted philosopher of art, Nelson Goodman. For 28 years, I was the co-director of Project Zero and I am happy to say that the organization continues to thrive"

(AERA, 2003)



Research on Multiple Intelligences

Several major researchers in the area of multiple intelligences have websites with published materials and articles. These authors have published in popular magazines as well as peer-reviewed journals.

- Thomas Armstrong - <http://www.thomasarmstrong.com/>
- David Lazear - <http://www.davidlazear.com>

General Research Findings

- Intelligence is not fixed at birth. It changes and grows through life. It can be improved and expanded.
- Intelligence can be taught and improved by activating levels of perception.
- Intelligence is a multiple phenomenon that occurs in many different parts of the brain/mind/body system.
- A stronger, more dominant intelligence can be used to train (improve or strengthen) a weaker intelligence.

Eight Intelligence Domains - Howard Gardner

Verbal Linguistic	
INTELLIGENCE	LEARNS BEST
<ul style="list-style-type: none"> • Use words effectively and have highly-developed auditory skills • Enjoy reading, playing word games, and writing • Have good memory for verse, lyrics, or trivia 	<ul style="list-style-type: none"> • Saying, hearing, and seeing words
Logical-Mathematical	
<ul style="list-style-type: none"> • Think conceptually, abstractly, and are able to see and explore patterns and relationships • Enjoy reasoning, calculating, playing logic games, solving puzzles • Likes brain teasers, logical puzzles, and strategy games. 	<ul style="list-style-type: none"> • Categorizing and classifying • working with abstract patterns and relationships.
Bodily-Kinesthetic	
<ul style="list-style-type: none"> • Like movement and communicate well through body language and physical activity • Excel at hands-on learning • Process knowledge through bodily sensations – moving, touching, manipulation, role plays, creative movement 	<ul style="list-style-type: none"> • Touching, moving, interacting with space • Processing knowledge through bodily sensations

Visual-Spatial	
<ul style="list-style-type: none"> • Think in terms of physical space and thinks in images and pictures • Learn best through drawings, designs, and imagery • Likes mazes, jigsaw puzzles, films, diagrams, maps, charts 	<ul style="list-style-type: none"> • Visualizing, dreaming • Using the mind's eye • Working with colors/pictures
Musical-Rhythmic	
<ul style="list-style-type: none"> • Show sensitivity to rhythm, melody, and sound • May study with music in the background, play an instrument, notice non-verbal sounds in the environment, learn more easily if sung or tapped out. 	<ul style="list-style-type: none"> • Rhythm • Melody • Music
Interpersonal	
<ul style="list-style-type: none"> • Enjoy interacting with others • Learn best through group activities • Sensitivity to facial expressions, voice and gestures and has ability to respond effectively to those cues • Understand and care about people and like to socialize 	<ul style="list-style-type: none"> • Sharing, comparing, relating • Cooperating • Interviewing
Intrapersonal	
<ul style="list-style-type: none"> • Are in tune with their personal inner feelings, moods, and motivations • Have an accurate picture of personal strengths and limitations • Have capacity for self-discipline • Learn best through independent study and introspection 	<ul style="list-style-type: none"> • Working alone on individualized projects • Self-paced instruction • Having own space
Naturalist	
<ul style="list-style-type: none"> • Understands the natural world including plants, animals and scientific studies. • Is able to recognize and classify individuals, species and ecological relationships. • Interacts effectively with living creatures • Sees patterns of life and natural forces. 	<ul style="list-style-type: none"> • Sensitivity to the world of nature • Enjoys working with plants and animals, and • Enjoys observing nature

Optional Resources

- What is the theory of multiple intelligences? - [http://webserver2.ascd.org/tutorials/tutorials3.cfm?ID=30&TITLE=Multiple Intelligence&SUB_I=1](http://webserver2.ascd.org/tutorials/tutorials3.cfm?ID=30&TITLE=Multiple%20Intelligences&SUB_I=1)
- MIDAS - Multiple Intelligence Developmental Assessment Scales - <http://www.miresearch.org/>

What is musical intelligence?

Gardner indicates that "pitch (or melody) and rhythm: sounds emitted at certain auditory frequencies and grouped according to a prescribed system" are most central to the musical intelligence. He explains that pitch is more important in certain cultures. He discusses "Oriental societies that make use of tiny quarter-tone intervals" (1983). Other cultures (such as sub-Saharan Africa) emphasize rhythm where "rhythmic ratios can reach a dizzying metrical complexity" (1983). Gardner discusses the horizontal and vertical organization of music. Horizontal refers to the "relationship of pitches as they unfold over time." Vertical refers to the "effect of two or more sounds emitted at the same time, giving rise to a harmonic or a dissonant sound." Gardner also states that timbre - the characteristic qualities of a tone, is an important element.

Central Elements - "Cores" of Music

- pitch
- rhythm
- timbre

"Musings on the Musical Intelligence" - <http://www.ascd.org/pdi/mi/lesson6.html> (ASCD)

The musical intelligence is central to human experience. It's the earliest of the intelligences to emerge--even children as young as two months old can sing and match rhythmic structures. And it's closely linked to our other intelligences--we often "feel" music with our bodies and move accordingly, we often "feel" music with our emotions, and cry or laugh accordingly. Indeed, as Howard Gardner writes in *Frames of Mind* (1983), many scientists believe that...

"if we can explain music, we may find the key for all human thought."

Armstrong states that the musical intelligence is the intelligence of tone, rhythm, and timbre.

Lazear describes the musical intelligence in this pop-up from

http://www.davidlazear.com/mi_overview.html#

MUSICAL-RHYTHMIC INTELLIGENCE (sometimes called "music smart" or "sound smart") is the auditory intelligence. As such, it deals in the realm of sound, tones, beats, rhythm, and yes music. These can be sounds from the environment, from machines, from the human voice, or from musical instruments.

BENEFITS to you of developing and enhancing your musical-rhythmic intelligence include--

- Knowledge of how to lower stress through music and rhythm
- Enhanced abilities to promote greater creativity in yourself and others
- Discover your hidden capacities for learning and for remembering information, peoples names, a shopping list, and so on
- Discover how to use music, rhythm, and sound to shift moods to more optimal states of being
- Knowledge of how to use music and sound to deepen personal relationships with others

Music is universal, crossing cultural borders, playing a significant, unifying role in the earliest history of man throughout the world. The components of the musical intelligence, sensitivity to pitch or melody and rhythm, provide the core elements or set of operations. Musical notation provides a complex separate symbol system. Individuals process musical tones in the right hemisphere of the brain, but with formal training and greater competence, musicians utilize the left hemisphere as well (Gardner, 1983, pp.118-119). The musical/rhythmic intelligence is represented in the brain in both the left and right hemispheres, as well as the limbic system (emotional). The more formal and analytical aspects of music as a system are in the left hemisphere and the figural/experiential aspects are in the right hemisphere (Lazear).



Awakening the Musical Intelligence

A teacher can help a child develop the musical intelligence. That intelligence must be awakened, amplified, taught, and transferred to life situations. Intelligence is not stagnant. Each intelligence can be awakened, strengthened by practice, and "taught" in the classroom.

- Stage 1: Awaken - trigger the intelligence
- Stage 2: Amplify - strengthen by practice
- Stage 3: Teach - learn content, acquire specific knowledge, achieve the goal of the lesson
- Stage 4: Transfer the intelligence to life, integrate into the task of living in the world outside of the classroom



MUSICAL-RHYTHMIC

- Aural language
- Pitch, rhythm, timbre
- Composing, singing, playing instruments
- Strong connection between music and emotions
- Careers: singer, instrumentalist, sound engineers, producer, critic, instrument maker, teacher, conductor

MUSICAL INDICATORS

- Listens and responds with interest to a variety of sounds: human voice, music, environmental sounds
- Enjoys opportunities to hear music or environmental sounds
- Eager to learn music from musicians

- Uses vocabulary and notations of music
- Responds to music kinesthetically by conducting, performing, creating, dancing
- Recognizes different musical styles, genres, cultural variations
- Develops a personal frame of reference for listening to music
- Enjoys improvising and playing with sounds
- Ability to sing and/or play an instrument alone or with others
- Ability to interpret meaning from music
- Analyze and critique musical selections
- May create original compositions and/or musical instruments

MUSICAL CURRICULUM PLANNING

- Sing songs across the curriculum
- Rap poetry, math, repetitive phrases, 2nd language phrases, etc.
- Play background music for various activities and different moods in the classroom
- Echo rhythms and melodies
- Play musical instruments
- Have an exploratory musical center for sound experimentation and creativity
- Use computer music software and games
- Explore music around the world
- Purchase rhythm instruments, keyboards, songflutes, recorders
- Have a library of CDs with a variety of sounds
- Learn dances
- Give musical plays and performances integrated with your curriculum



Nurture or Nature? What musical experiences did you have in your own childhood?

Your "child's intelligence is shaped and influenced by his cumulative experiences over time. Nurturing has a profound effect on intelligence. The nature-versus-nurture debate is wrongly framed — biology matters, and so does experience. Intelligence doesn't develop in a vacuum. Your child's intelligence is being shaped, challenged, and expressed every day by experiences with people, objects, and events — especially when he is an active participant. These experiences are the raw ingredients of intelligence. Here's more good news. These same ingredients nurture many different facets of a child's intelligence, such as the creative, the musical, the interpersonal, and the logical, as well as the Shakespeare-memorizing and geometry-learning kinds."

From Scholastic Article -

http://www.scholastic.com/earlylearner/infant/learning/baby_naturenurture.htm

Developing Musical Intelligence

Gardner states that the musical intelligence emerges earlier than any of the other intelligences. He emphasizes that positive early childhood experiences, particularly those that explore the creative potential of music, are crucial to the development of the musical intelligence. If the musical/rhythmic intelligence is recognized as an autonomous, separate intelligence, the role of the educator in fostering the development of the musical intelligence is significant. In structuring a music curriculum which has as its goal, the development of the musical intelligence, emphasis needs to be placed on early childhood music education. According to Armstrong (1994), developing multiple intelligences depends on three factors:

- Biological Endowment - hereditary or genetic factors or injuries to the brain before, during, or after birth
- Personal Life History - experiences with parents, teachers, peers, friends, and others who awaken intelligences or keep them from developing.
- Cultural and Historical Background - time and place in which you were born and raised, and the nature of cultural and historical developments in different domains

Gardner provides a portrait of early musical competence. In infancy, normal children sing, babble, produce undulating patterns, and imitate tones sung by others. An important transition in their musical lives occurs in the middle of the second year of life when they begin to emit tones that explore small intervals from seconds to fourths. They begin to invent spontaneous songs and imitate short patterns from familiar songs. By age three or four, the original tunes and exploratory sound play give way to conformity as they begin to limit themselves to the songs of the dominant culture. By school age, children know what a song should be according to the cultural practice. They can produce a fairly accurate rendition of common melodies.

Gardner claims that, for most children in our culture, there is little further musical development after the school years begin unless they exhibit unusual musical talent or have exceptional opportunities. Musical repertoire may expand, skill in performance may improve, and knowledge about music may increase, but creative development is minimal. Gardner states that this may be because "music occupies a relatively low niche in our culture, musical literacy is acceptable" (1983, p. 109). Our society does not have high musical expectations for the average individual, in contrast to expectations for the mastery of verbal or mathematical skills. The multiple intelligence theory values nurture as much as nature in the development of intelligences. Crystallizing experiences spark the musical intelligence, starting off the development of talents and abilities. These experiences may provide a turning point for the child. Paralyzing experiences shut down the musical intelligence, discouraging the development of talents and abilities. A child's musical growth is easily stunted when he/she is told to "stop that racket" as he/she practices an instrument.



Project Spectrum

One practical research study by Gardner involved the emergence and nurturance of multiple intelligences in early childhood - the Spectrum Project. This study involved a pre-school curriculum based on the theory of the multiple intelligences. Assessment was conducted over time with materials in the child's own environment. Gardner believed that schools stress the

linguistic and logical intelligences, ignoring other intelligences. In his book, *The Unschooled Mind* (1991) he stated his belief that "we consign many students who fail to exhibit the proper 'blend' to the belief that they are stupid, and we do not take advantage of ways in which multiple intelligences can be exploited to further the goals of school and the broader culture" (Gardner, 1991, p. 81). Project Spectrum's approach to assessment called for two types of measurement, "intelligence-fair" measures using instruments that looked at the intelligence in operation, and the Stanford-Binet intelligence test based on linguistic or logical-mathematical assessment.

The Spectrum classroom provided a nourishing environment where pre-school children had an opportunity to explore various learning areas. Each learning area featured engaging materials based on particular intelligences or combinations of intelligences. The music area included a music production activity which was designed to assess a child's ability to maintain accurate pitch and rhythm while singing, and to recall a song's musical properties. A musical perception activity assessed a child's ability to discriminate pitch. This activity consisted of song recognition, error recognition, and pitch discrimination. Children observed adults or older peers as they worked and played in these areas, giving them an opportunity to appreciate the materials and the nature of the musical skills. Musical mentors taught children how to interact with these tools in a meaningful way. The child was assessed in each domain to determine interest, approach, focus, strengths, and response. Positive early childhood experiences, particularly those that explore the creative potential of music, are crucial to the development of the musical intelligence.



Harvard Project Zero - <http://www.pz.harvard.edu/>

Examine the Harvard Project Zero website for information on continued research with multiple intelligences and the arts. "Project Zero was founded at the Harvard Graduate School of Education in 1967 by the philosopher Nelson Goodman to study and improve education in the arts. Goodman believed that arts learning should be studied as a serious cognitive activity, but that "zero" had been firmly established about the field; hence, the project was given its name. David Perkins and Howard Gardner served as co-directors of Project Zero from 1972 to July 1, 2000, when Dr. Steve Seidel, an expert on alternative student assessment, was named Director. Currently a lecturer on education at the Harvard Graduate School of Education, Steve Seidel joined HPZ in 1987. In his research, he has explored teachers' reflective practices, the close examination of student work, and documentation of learning. Howard Gardner and David Perkins continue their active involvement with HPZ through their research and on its steering committee."

Creating Minds - Stravinsky



In his book *Creating Minds* (1993), Gardner presents the lives of seven "end-state" individuals representing the seven domains of intelligence. Gardner describes the factors that contribute to their creativity. He uses the composer, Stravinsky, as the model of the "end-state" musical intelligence. (See the course document with quotations from seven "end-state" individuals).

Gardner states:

"I contend that the creator is an individual who manages a most formidable challenge: to wed the most advanced understandings achieved in a domain with the kinds of problems, questions, issues, and sensibilities that most characterized his or her life as a wonder-filled child...Individuals who ultimately make creative breakthroughs tend from their earliest days to be explorers, innovators, tinkers."

Importance of Mentors or Masters in Developing "End-State" Intelligence

Gardner describes the triangle of creativity, which includes three organizing themes. The first is the relationship between the child and the master. The second is the relationship between an individual and his work. The third relationship is between an individual and other persons whose role has been crucial throughout their development (*Creating Minds*, 1993, p. 8). The significance of the music teacher as master or mentor in the process of educating the musical intelligence is emphasized by another research project, Harvard Project Zero. Project Zero determined that students needed to be introduced to the ways that practicing artists and those involved in the arts think as they analyze, criticize, and investigate the arts within our culture. Meaningful production of art under the guidance of artistic mentors is thought to be of central importance.



Rubinstein

Application of Multiple Intelligences Research in Alternative Assessment

The biographies of famous musicians, like those of mathematicians, contain many stories of the early emergence of extraordinary talent at an early age, even before the child has received musical training. For example, at the age of 3, Arthur Rubinstein was taken to the great teacher and violist, Jacob Joachim, because his parents, who themselves lacked musical training, recognized his extraordinary talent. In this interview, young Arthur was asked to call out chords struck on the piano, to play a theme from a Schubert symphony after Joachim had hummed it, and to add the correct harmonies to the phrase and to transpose it. Joachim concluded from this brief interaction: "This boy may become a great musician... he certainly has the talent for it. Let him hear some good singing, but do not force music on him. When the time comes for serious study,

bring him to me and I shall be glad to supervise his artistic education.” (Rubinstein, 1978). Of course, Joachim was correct in his assessment and Rubinstein returned to Berlin to study with Joachim five years later.

Our review of the empirical evidence, including biographies of child prodigies like Rubinstein, studies of brain-damaged adults, reports on idiot savants, cross-cultural accounts, as well as the child development literature, supports the inclusion of musical aptitude on our list of intelligences. Even though it runs counter to our first intuitions of what constitutes “intelligent” behavior, musical aptitude belongs on our list along with linguistic and logical-mathematical aptitude.

In the view of Multiple Intelligences, all seven faculties are equivalent -- some are not more “important” than others. Although twentieth-century western society values the linguistic and logical skills most highly and offers rewards to those who excel in these areas, other cultures value the intelligences differently. We must be careful to distinguish the psychological level, on which the intelligences are equivalent, from the sociological level, on which the intelligences may be differentiated.

Resources by Joseph Walters:

<http://www.ncela.gwu.edu/ncbepubs/symposia/second/vol1/application.htm>



"The Role of Musical Intelligence in a Multiple Intelligences Focused Elementary School"

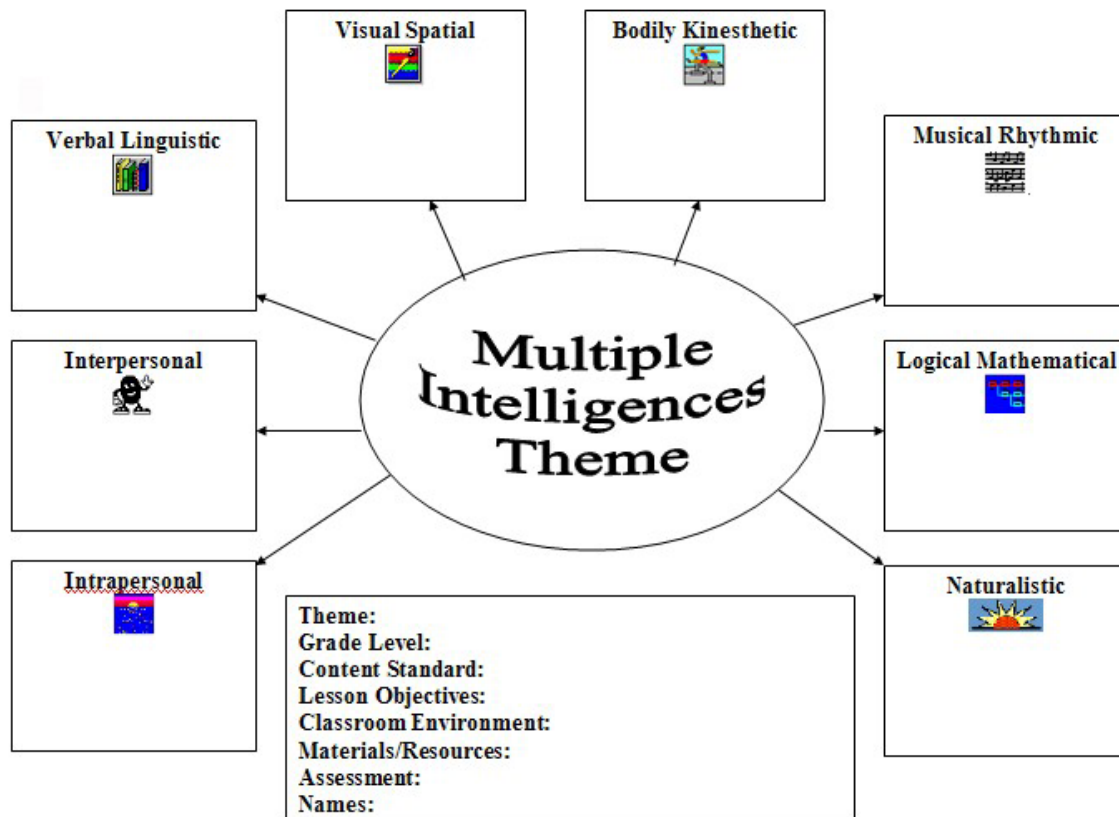
What is Musical Intelligence?

Two important facets of MI theory appear to have significant bearing on the nature of musical intelligence. First is the premise that the intelligences can be educated or developed through schooling and learning (Gardner, 1993 p.334). For example, if someone learns to play an instrument, the knowledge to be acquired is musical. The material mastered falls squarely in the domain of musical intelligence. Secondly is the premise that the intelligences may each be exploited as a means of transmission, often referred to as an entry point or catalyst for learning all manner of content (Gardner, 1993, 1995a, 1996).

For many educators, musical intelligence is often regarded as a talent derived from natural ability, or a gift that only certain people possess (Gardner, 1993, Hinckley, 1998, Reimer, 1998). Intelligence associated with musical understanding does not always relate to superior levels of achievement in other academic areas. Yet MI theory holds that the nurturing and development that takes place in musical learning is autonomous and on par with the processes that take place in studying languages, mathematics and the sciences (Potter, 1997, p.3). Thus, musical intelligence (like all intelligences) can serve as both form or means of learning, and message or content learned (Gardner, 1993, p. 334).

Resource: Susan W. Mills - <http://ijea.asu.edu/v2n4/>

Curriculum Planning for Multiple Intelligences



Variations on a Theme: How Teachers Interpret MI Theory

Read Linda Campbell's Article in Education Leadership (ASCD) - <http://www.ascd.org/readingroom/edlead/9709/campbell.html>

- **Lesson design.** Some schools focus on lesson design. This might involve team teaching ("teachers focusing on their own intelligence strengths"), using all or several of the intelligences in their lessons, or asking student opinions about the best way to teach and learn certain topics.
- **Interdisciplinary units.** Secondary schools often include interdisciplinary units.
- **Student projects.** Students can learn to "initiate and manage complex projects" when they are creating student projects.
- **Assessments.** Assessments are devised which allow students to show what they have learned. Sometimes this takes the form of allowing each student to devise the way he or she will be assessed, while meeting the teacher's criteria for quality.
- **Apprenticeships.** Apprenticeships can allow students to "gain mastery of a valued skill gradually, with effort and discipline over time." Gardner feels that apprenticeships "...should take up about one-third of a student's schooling experience."

Resources for Curriculum Planning with Multiple Intelligences

- The Seven Ways to Approach Curriculum - Thomas Armstrong - http://www.thomasarmstrong.com/articles/7_ways.htm
- Assessment - <http://www.teachervision.fen.com/lesson-plans/lesson-4933.html>
- The Renaissance Project - <http://www.unex.ucr.edu/education/MI/reforming.html>
- Musical Intelligence Activity Chart from Teacher Vision - <http://www.teachervision.com/lesson-plans/lesson-2204.html>

Musical Intelligence Activity Chart from Teacher Vision

Verbal-Linguistic	Logical-Mathematical	Visual-Spatial	Bodily-Kinesthetic
choral speaking	problem solving	graphing	hands on experiments
declarizing	measuring	photographing	activities
storytelling	coding	making visual metaphors	changing room arrangement
retelling	sequencing	making visual analogies	creative movement
speaking	critical thinking	mapping stories	going on field trips
debating	predicting	making 3D projects	physical education activities
presenting	playing logic games	painting	crafts
reading aloud	collecting data	illustrating	dramatizing
dramatizing	experimenting	using charts	using cooperative groups
book making	solving puzzles	using organizers	dancing
nonfiction reading	classifying	visualizing	
researching	using manipulatives	sketching	
listening	learning the scientific model	patterning	
process writing	using money	visual puzzles	
writing journals	using geometry		

Musical	Interpersonal	Intrapersonal	Naturalistic
humming	classroom parties	personal response	reading outside
rapping	peer editing	individual study	cloud watching
playing background music	cooperative learning	personal goal setting	identifying insects
patterns	sharing	individual projects	building habitats
form	group work	journal log keeping	identifying plants
playing instruments	forming clubs	personal choice in projects	using a microscope
tapping out poetic rhythms	peer teaching	independent reading	dissecting
rhyming	social awareness		going on a nature walk
singing	conflict mediation		build a garden
	discussing		studying the stars
	cross age tutoring		bird watching
	study group		collecting rocks
	brainstorming		making bird feeders
			going to the zoo

Some of these ideas are similar to the Teacher Vision Chart above. The following list provides a survey of the techniques and materials that can be employed in teaching through the multiple intelligences. http://www.spannj.org/BasicRights/appendix_b.htm

ADDITIONAL RESOURCE FOR CURRICULUM PLANNING

MULTIPLE INTELLIGENCES: STRATEGIES IN THE CLASSROOM

Linguistic Intelligence

- lectures, debates
- large- and small-group discussions
- books, worksheets, manuals
- brainstorming
- writing activities
- word games
- sharing time
- storytelling, speeches, reading to class
- talking books and cassettes
- extemporaneous speaking
- journal keeping
- choral reading
- individualized reading
- memorizing linguistic facts
- tape recording one's words
- using word processors
- publishing (e.g., creating class newspapers)

Logical-Mathematical Intelligence

- mathematical problems on the board
- Socratic questioning
- scientific demonstrations
- logical problem-solving exercises
- creating codes
- logic puzzles and games
- classifications and categorizations
- quantifications and calculations
- computer programming languages
- science thinking
- logical-sequential presentation of subject matter
- Piagetian cognitive stretching exercises
- Heuristic

Bodily-Kinesthetic Intelligence

- creative movement, mime
- hands-on thinking
- field trips
- the classroom teacher
- competitive and cooperative games
- physical awareness and relaxation exercises
- all hands-on activities
- crafts
- body maps
- use of kinesthetic imagery
- cooking, gardening, and other "messy" activities
- manipulatives
- virtual reality software
- kinesthetic concepts
- physical education activities
- communicating with body language/hand signals
- tactile materials and experiences
- body answers

Musical Intelligence

- musical concepts
- singing, humming, whistling
- playing recorded music
- playing live music on piano, guitar, or other instruments
- group singing
- mood music
- music appreciation
- playing percussion instruments
- rhythms, songs, raps, chants
- using background music
- linking old tunes with concepts
- discographies
- creating new melodies for concepts
- listening to inner musical imagery
- music software
- super memory music

Spatial Intelligence

- charts, graphs, diagrams, and maps
- visualization
- photography
- videos, slides, and movies
- visual puzzles and mazes
- 3-D construction kits
- art appreciation
- imaginative storytelling
- picture metaphors
- creative daydreaming
- painting, collage, visual arts
- idea sketching
- visual thinking exercises
- graphic symbols
- using mind-maps and other visual organizers
- computer graphics software
- visual awareness activities
- optical illusions
- color cues
- telescopes, microscopes, and binoculars
- visual awareness activities
- draw-and-paint/computer- assisted- design software
- picture literacy experiences

Interpersonal Intelligence

- cooperative groups
- interpersonal interaction
- conflict mediation
- peer teaching
- board games
- cross-age tutoring
- group brainstorming sessions
- peer sharing
- community involvement
- apprenticeships
- simulations
- academic clubs
- interactive software
- parties / social gatherings as context for learning
- people sculpting

Intrapersonal Intelligence

- independent study
- feeling-toned moments
- self-paced instruction
- individualized projects and games
- private spaces for study
- one-minute reflection periods
- interest centers
- personal connections
- options for homework
- choice time
- self-teaching programmed instruction
- exposure to inspirational/ motivational curricula
- self-esteem activities
- journal keeping
- goal setting sessions



Education Reform and Standards

Public education reform was triggered a decade earlier by a report, [A Nation at Risk](#), which claimed that U.S. students generally achieved at lower skill levels than those of other industrialized nations (National Commission on Excellence in Education, 1983). The [Goals 2000: Educate America Act](#) enacted by Congress in 1994 (United States of America 103rd Congress), provided the framework for education reform for the 21st Century. This legislation called for the

establishment of high-quality, internationally competitive content and performance standards for all students, promoted the use of technology to enable all students to achieve national goals, and emphasized the need for teacher education and professional development. Teachers were to be given the opportunity to acquire the knowledge and skills needed to instruct and prepare students for the next century.

Education Reform focused on research to determine how students learn. The emphasis moved toward the cognitive sciences during the 1980s. Behaviorism had been the dominant theoretical focus of the 1960-1970s. Brain research was helping educators and researchers develop new ways of understanding how students learn. Education reform emphasized meaningful learning rather than rote memorization. The focus of education reform was on creating standards for each subject matter area and grade level determining what a student should know and be able to do. Teacher standards were developed as well. Teacher training emphasized pedagogically effective practices, as well as subject matter competence. Lesson planning objectives began to focus on meeting national or state subject matter content standards.



National Standards for Music Education -

<http://www.menc.org/publication/books/standards.htm>

- MENC Listing - <http://www.menc.org/publication/books/standards.htm>
- National Standards - <http://www.education-world.com/standards/national/arts/index.shtml#music>
- Music Educators Resource Links - <http://www.soundpiper.com/cpiper/merlmenu.htm>
- Kennedy Center ArtsEdge Curriculum Studio - http://artsedge.kennedy-center.org/professional_resources/standards/artsedge.html

National Standards for Music Education

1. Singing, alone and with others, a varied repertoire of music.
2. Performing on instruments, alone and with others, a varied repertoire of music.
3. Improvising melodies, variations, and accompaniments.
4. Composing and arranging music within specified guidelines.
5. Reading and notating music.
6. Listening to, analyzing, and describing music.
7. Evaluating music and music performances.
8. Understanding relationships between music, the other arts, and disciplines outside the arts.
9. Understanding music in relation to history and culture.



State Standards for Music (Visual and Performing Arts)

- State Standards for Music Education - <http://www.educationworld.com/standards/state/toc/index.shtml#arts>
- California Standards for Visual and Performing Arts - <http://www.cde.ca.gov/standards/vpa/>
- California Standards for Music - <http://www.cde.ca.gov/standards/vpa/music/>
- California Visual and Performing Arts Education - <http://www.cde.ca.gov/shsd/arts/>
- California Visual and Performing Arts Frameworks - <http://www.cde.ca.gov/cfir/vpa/>
- California Visual and Performing Arts Framework - Adobe Reader pdf file - <http://www.cde.ca.gov/cfir/vpa/vpaframework.pdf>

California Standards for Music

1.0 ARTISTIC PERCEPTION

Processing, Analyzing, and Responding to Sensory Information Through the Language and Skills Unique to Music

Students read, notate, listen to, analyze, and describe music and other aural information, using the terminology of music.

- *Read and Notate Music*
- *Listen to, Analyze, and Describe Music*

2.0 CREATIVE EXPRESSION

Creating, Performing, and Participating in Music

Students apply vocal and instrumental musical skills in performing a varied repertoire of music. They compose and arrange music and improvise melodies, variations, and accompaniments, using digital/electronic technology when appropriate.

- *Apply Vocal and Instrumental Skills*
- *Compose, Arrange, and Improvise*

3.0 HISTORICAL AND CULTURAL CONTEXT

Understanding the Historical Contributions and Cultural Dimensions of Music

Students analyze the role of music in past and present cultures throughout the world, noting cultural diversity as it relates to music, musicians, and composers.

- *Role of Music*
- *Diversity of Music*

4.0 AESTHETIC VALUING

Responding to, Analyzing, and Making Judgments About Works of Music

Students critically assess and derive meaning from works of music and the performance of musicians according to the elements of music, aesthetic qualities, and human responses.

- *Analyze and Critically Assess*
- *Derive Meaning*

5.0 CONNECTIONS, RELATIONSHIPS, APPLICATIONS

Connecting and Applying What Is Learned in Music to Learning in Other Art Forms and Subject Areas and to Careers

Students apply what they learn in music across subject areas. They develop competencies and creative skills in problem solving, communication, and management of time and resources that contribute to lifelong learning and career skills. They also learn about careers in and related to music.

- *Connections and Applications*
- *Careers and Career-Related Skills*

National and State Subject Matter Content Standards

- National Standards- <http://www.education-world.com/standards/index.shtml>
- National Standards Table of Contents: <http://www.education-world.com/standards/national/toc/index.shtml>
- State Standards - <http://www.education-world.com/standards/state/index.shtml>



Multiple Intelligence Lesson Planning

Musical/Rhythmic Intelligence Domain Requirements

- Include a specific music standard to be met with this lesson.
- Go beyond simple task like writing your own words to an already familiar melody.
- Focus on one of the nine national music standards
 - Singing, alone and with others, a varied repertoire of music.
 - Performing on instruments, alone and with others, a varied repertoire of music.
 - Improvising melodies, variations, and accompaniments.
 - Composing and arranging music within specified guidelines.
 - Reading and notating music.
 - Listening to, analyzing, and describing music.
 - Evaluating music and music performances.
 - Understanding relationships between music, the other arts, and disciplines outside the arts.
 - Understanding music in relation to history and culture.

- Focus one of the five California standards -
 - Artistic perception
 - Creative expression
 - Historical and cultural context
 - Aesthetic valuing
 - Connections, relationships, and applications

Music Lesson Unit Planning with Multiple Intelligences

Title:

Objectives:

Content Standard Met: (Include Subject Matter and Grade Level)

Classroom Environment Needed:

Learning Activities:

Musical/Rhythmic: (Include which specific music standard that is being met)
Visual/Spatial:
Verbal/Linguistic:
Mathematical/Logical:
Bodily/Kinesthetic:
Interpersonal:
Intrapersonal:
Naturalistic:

Lesson Sequence:

Assessment:

Materials/Resources: