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The Methodology of Howard Gardner

Applied to Music Learning

By

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Abstract

Howard Gardner advances provocative theories concerning the processes of learning. His theories combined with plausible ideas concerning their applications has led to the creation of learning centers and specialized instructional materials embracing his views. Through an impressive series of books, Howard Gardner synthesizes a lifetime of educational thought into his highly developed views on education. His global survey of processes considers the best in methodology from as far away as Japan and Germany and includes outstanding examples of education in America. He advocates provocative educational models with refreshing variety and backs his insightful views with valid scientific thought. Rejecting an education that emphasizes quantity of content, Dr. Gardner advocates a process where a depth of study in strategic learning areas brings about true understanding and a variety of transferable skills.

The Methodology of Howard Gardner Applied to Music Learning

Much has been written about the educational theories of Howard Gardner. First advocated in Frames of Mind: The Theory of Multiple Intelligences (1983), Gardner's theory of multiple intelligences has been the basis of Gardner-like learning centers and Gardner instructional materials. Though groundbreaking in recognizing the individual learning styles of students, these materials appear to be an oversimplification of the most highly synthesized theories of Howard Gardner. His progression of books indicates an evolving Howard Gardner. His newest book, The Disciplined Mind (1999), makes a strong case for a variety in education based around three vital human attributes; the true, the beautiful, and the good. Additionally, this latest work advances his theory of "multiple intelligences" from the initial seven to nine distinct areas of brain potential.

Gardner provides a concept that enables the grouping of each person's unique combination of potentials into what he calls "intelligences" (Gardner, 1983). His selection of the word "intelligence" to describe the various categories was purposeful. Gardner explained his purposes in an interview.

I'm deliberately being somewhat provocative. If I'd said that there's seven kinds of competencies, people would yawn and say 'Yeah, yeah.' But by calling them 'intelligences,' I'm saying that we've tended to put on a pedestal one variety called intelligence, and there's actually a plurality of them, and some are things we've never thought about as being "intelligence" at all (Armstrong, 1994, p. 4).

To fully appreciate Gardner's theory of multiple intelligences, a slight diversion into the realm of brain learning theory provides support for his theory by examining its probable roots. Current research into the human brain provides evidence that our minds process information in a variety of ways. Our responses to information are processed and recorded in our own personal

combination of brain strengths and connections. Individually, our complex brains have developed uniquely in their various specialized areas. Additionally, we have literally "grown" distinctly individual connections in each of our brains. This unique mix of brain "matter" matters quite a lot when people are asked to remember, process, and respond to information. Though many areas of the brain work in consort, it seems that a given individual's information "pathways" are essentially "lubricated" to a higher level for specific tasks and perceptions. Howard Gardner is probably selectively digesting these theories and formulating teaching strategies based upon them.

Though Gardner's theory of multiple intelligences is generally accurate, it seems a little inaccurate to think of brain learning as being totally compartmentalized. The brain learns and remembers on many different levels and remembers best when information is encoded in a variety of ways. The brains seems to "assemble" information as it is needed. It draws its needed formulations from the various encodings that we have uniquely provided in our personal brain. In respect to all of this, Howard Gardner's latest book, The Disciplined Mind (1999), expands his multiple intelligence theory, advocating a learning where total emersion into a given subject is combined with aspects of learning on an emotional level. These latest twists in the evolving theories of Howard Gardner have significant basis in brain learning theory (e.g., Dugan & Minninger, 1994; Jensen, 1998).

The brain seems to be uniquely designed for music. Passive exposure to music could engage most of the brain and the active performance of music engages even more. Norman Weinberger is a neuroscientist at the University of California at Irvine with expertise in the brain's auditory cortex and its response to music. He says, "An increasing amount of research findings supports the theory that the brain is specialized for the building blocks of music"

(Weinberger, 1995, p.6). Eric Jenson claims, "Much research suggests that the auditory cortex responds to pitch and tones rather than simply raw sound frequencies, and individual brain cells process melodic contour. Music may, in fact, be critical for later cognitive activities" (Jenson, 1998, p. 37).

Considering conventional brain learning theory as a premise for Gardner's theory of multiple intelligences, some of the instructional materials designed to embrace his theories appear to be overly simplistic. A common format found in a survey of materials that utilize Gardner's theories as the basis for instruction, is one that presents a desired learning objective followed by a sequence of activities that individually address the various intelligences (e.g., Faculty of the New City School, 1994 & 1996; Campbell, 1994). The musical applications found in several of the Gardner workbooks are designed to present logical-mathematical or verbal material through the music pathway. The use of rap music to "drive in" some "quantity of content" curricular material might be a novel approach, but it probably doesn't embrace the fully developed concepts of Howard Gardner. Most of us remember learning the alphabet to a song. In this case, the melody is paired with the words. The logical progression of the easily learned melody pairs with the encoding of the words thereby strengthening the learning and recall process.

Though Gardner doesn't clearly articulate it in his books, the musical aspect of intelligence has a high emotional component (Dugan & Minninger, 1994). Gardner refers to the "syntactic" aspect of music and acknowledges that music has its own stream-like properties (1991). Research aside from Gardner explains important ties to emotional encoding (Jenson, 1998). In his latest book, Gardner does advocate a strong emotional component in learning when he describes his trio of educational purposes; the true, the beautiful, the good (Gardner, 1999).

Additionally, it appears that the auditory cortex is totally engaged through the processing of pitch, timbre, and contour (Jenson, 1998). Perhaps, only those of us most intimately involved in the creation and performance of music understand the complex issues of timbre, pitch and contour. However, those subtleties provide the substance of the musical intelligence that Gardner alludes to. Though Gardner doesn't seem to get into the specifics of this finding, he seems to, in a general way, know that musicians are reacting to some type of unique learning complex. He establishes that fact the very young students "fail to appreciate the many subjective factors involved in completing or evaluating a work" (Gardner, 1989, p. 69).

The use of "rap" as an entry point to the musical component of the multiple intelligences may only form a loose connection to the audio cortex. Rap's rhythmic reiterations might only provide a logical pairing, again addressing the "logical-mathematical" intelligence. After an analysis of available information on the brain and learning, it appears that there is necessarily some amount of overlap. It should be clear that any activity engaging the musical intelligence should tap into the audio cortex's ability to encode and distinguish pitch, timbre, and contour. The engagement of the whole musical intelligence should probably involve the performance of music. Melody with contour would have more musical meaning than rap.

Recent brain research seems to indicate that the "bodily-kinesthetic" intelligence identified by Gardner might involve neuro-intelligence apart from but connected to the brain (Jensen, 1998). Therefore, the performance of music links the bodily-kinesthetic intelligence with those processes of the whole brain related to the perceptions of music. The various attributes of music including its visual perception, mathematical relationships, unique symbology, tempo acuity, spatial relationships, and discriminating encoding of pitch, timbre, and contour into the audio cortex, indicates that music performance learning is whole brain learning.

Performance activity addresses many of Gardner's brain specific intelligences aside from the obvious musical intelligence. Additionally, if it is true that activities involving multiple sections of the brain create connections and "grow" actual physical brain material, whole brain activities like music "wire" the various sections of the mind and lubricate the exchange of information between the sections (Jenson, 1998). It should be obvious that materials embracing musical intelligence as a component of Gardner learning theory need to extend past rap music designed to merely encode traditional information. Music is unique in its unusual engagement of the whole brain.

Those who teach music could glean much from Gardner's theories. It would be a mistake, however, to assume that since one is involved in the teaching of music that whole brain engagement is automatic during the learning process. To varying degrees, students in music ensembles possess a unique mix of the potentialities described by Gardner's multiple intelligences theory. Getting to the specifics involved in music teaching is a process that involves a mix of traditional teaching and communication of information. Though the music teacher might be teaching music, that teacher may not be teaching in a musical manner. The delivery system is most likely some mix of verbal, visual and aural communication. The following consideration of several teaching methods should illustrate the point.

In the extreme example (and probably most ineffective), the music teacher might teach only by providing verbal instructions. The students must translate the teacher's words into representations of musical performance. That translation may or may not be effective based on the student's identification of the teacher's verbal cue that is paired with some aural representation processed in the auditory cortex. My personal experience indicates that older students, who have performed in my ensembles for years, will act upon a verbal cue

immediately. Given during rehearsal, short instructions like, "contour the phrase" or "march style" translate into an expressive, forward moving contour with slight volume increase or a staccato presentation of the music with a distinction of dot versus accent. The younger students, new to my teaching methods, rarely respond to this type of verbal cue. They lack the necessary pairing of the verbal cue with information stored in their auditory cortex. (They might even have experience producing the performance aspect that is being requested. They just lack the pairing.) They must, therefore, identify the teacher's verbal cue and pair it with abstract information.

Considerable rehearsal time could be expended trying to verbally describe an abstract musical concept. Gardner's theory (affirmed by a cadre of brain researchers, many pre-Gardner) would suggest that the teacher search for a more plausible pathway (Gardner, 1999). It should be logical to a music teacher that if the instruction involves singing or modeling of the desired performance, the student's musical intelligence is being utilized. Though the singing of an instrumental line is far superior to verbalization, anything less than an accurate model on the precise instrument being addressed does require some translation in the brain. If current brain research theory is accurate, an instrumental teacher singing to a clarinetist, for example, requires that the clarinetist translate the approximate pitch of the teacher's voice, translate the timbre, and approximate the vocal contour. A proper demonstration to a clarinetist on the clarinet accurately encodes all aspects of the audio cortex and requires little translation or interpretation on the part of the performer.

Gardner identifies the bodily-kinesthetic intelligence as "expertise in using one's whole body to express ideas and feelings and the facility in using one's hands to produce or transform things" (Armstrong, 1994, p. 3). This intelligence includes specific physical skills such as

coordination, balance, dexterity, strength, flexibility, and speed, as well as proprioceptive, tactile, and haptic capacities (Gardner 1983 & 1999).

Instrumental performing musicians must have a high level of bodily-kinesthetic intelligence. It is an area that is addressed from the very beginning of music learning. Students must train their bodies to perform intricate muscle motions paired to visual and audio cues. Clearly, instrumental performing musicians have linked portions of their bodily-kinesthetic intelligence and their whole brain learning embraced in the overall musical intelligence. This pathway is a plausible point of entry for effective music teaching (Gardner, 1999).

My personal experience with the bodily-kinesthetic relates to the teaching of music through movement. Students internalize rhythmic concepts when they develop a physical feel for the beat and move in a general way to points of stress. Additionally, the teaching of complicated rhythms through the use of "mixed rhythm" where students emphasize specific rhythmic "poles" through duration, volume stress, and actual exaggerated body movement, connects the bodily-kinesthetic intelligence to the rest of music learning. Though Gardner identifies this as an "intelligence" it has always been another "place" to lead music instruction. It is always amazing to note how participation in marching band leads to a heightened level of rhythmic stability for many students. It is that physical feeling for the beat taken to the extreme that aids the teaching music through the bodily-kinesthetic intelligence. The area of eurhythmics further isolates this area and is advocated by many music teachers as an enhancement to rhythmic learning.

"Interpersonal intelligence" is described as "the ability to perceive and make distinctions in the moods, intentions, motivations, and feelings of other people" (Armstrong, 1994, p. 3). This can include sensitivity to facial expressions, voice, and gestures; the capacity for discriminating among many different kinds of interpersonal cues; and the ability to respond effectively to those

cues in some pragmatic way (Gardner, 1983 & 1999). An astute student of the processes of music performance could probably substitute the word "conducting" for "interpersonal intelligence" and recognize the same type of communication. The skilled conductor "lives" in the non-verbal interpersonal realm. Under the proper leadership, students are subjected to a daily environment emphasizing the interpretation of gestures, facial expressions, and feelings. The skilled conductor should teach students the musical connection through this interpersonal pathway. If current brain research is accurate, the daily translation of these interpersonal cues should open the pathways to sensitivity to those same cues. The emphasis on the "how" in conducted performance instead of the "when" requires that the music teacher know the difference and that a study of a highly articulated and variable conducting style be communicated to students. Aside from the music, the sharing social environment of an well-organized music program should sensitize students to this important area of "interpersonal intelligence." The environment is ripe for the development of student leadership and personality growth.

Intrapersonal intelligence is defined as "Self-knowledge and the ability to act adaptively on the basis of that knowledge" (Armstrong, 1994, p. 3). This intelligence includes having an accurate picture of oneself (one's strengths and limitations); awareness of inner moods, intentions, motivations, temperaments, and desires; and the capacity for self-discipline, self-understanding, and self-esteem (Gardner, 1983 & 1999). Music teaching, learning, and performance all embody the tenets of this key intelligence area. The ability to know oneself is possibly heightened in a quality music ensemble experience and is certainly a part of the process in a solo music performance. A skilled teacher in the performing arts should engage the student and address those intrapersonal areas of greatest import to the human level of music making. A person learns a lot about oneself through the process of performance.

Musicians reaching the highest levels of performance often look deep within themselves in an almost introspective manner. It is possible for some particularly sensitive individuals to align their intense connection to the "soul" of music with elements beyond themselves in what Gardner refers to as "existential intelligence." He states, "And it is possible that human beings also exhibit a ninth, existential intelligence--the proclivity to pose (and ponder) questions about life, death, and ultimate realities" (Gardner, 1999, p. 72).

In addition to being a whole brain language, it is possible that the process of learning and performing music in the correct situation could utilize a skilled and systematic delivery-teaching system where all of Gardner's multiple intelligence pathways are accessed. If such a learning environment could be maintained, Gardner's theory of multiple intelligences as applied to learning might further demonstrate those theories articulated by Dr. Frank Wilson. Dr. Wilson advances the theory that music learning changes the way the brain processes information (Wilson, 1986).

Gardner establishes the fact that the linguistic and logical-mathematical intelligence areas are the main focus of contemporary schools (1999). His theories require an analysis of the teaching delivery system and always challenge the teacher to take into account the special mix of talents inherent in the individual. This concept is fundamental to the chosen methods of instruction and promotes fairness in the learning environment because individual diversity is recognized. His concept of teaching and learning via multiple pathways, as previously discussed, is scientifically valid because it provides for the multiple levels of brain reinforcement advocated by researchers.

Gardner's latest work suggests the value of in depth learning in selected areas. Preferring depth and quality to quantity of content, he is advocating a type of focused learning that fully

explores subjects utilizing all of an individual's intelligences. He advocates a content that explores subject areas in depth while he emphasizes his "trio of purposes;" considering what is true, what is beautiful, and what is good. Concluding innovative instruction, Gardner advocates an evaluation where students demonstrate their personal knowledge through individualized performance (Gardner, 1999).

Howard Gardner advocates an education that to many, seems unusual. It should be quite familiar to the experienced music teacher. Music in its oneness is comprised of a complex diversity of information processes. Music clearly involves total brain activity. Music teaching and learning has always emphasized individualized performance as a personal outcome of music instruction. To be effective in the teaching of music, the application of many aspects of Gardner's methodology is probably vital. His processes are probably fairly familiar to the better music teachers.

Gardner's writings are replete with musical analogies. The following quote conveys an especially significant meaning to musicians.

The teacher's job resembles that of a master orchestrator, who keeps the whole score in mind and yet can home in on particular passages and players. He or she should come up with questions, units, and performances of understanding that fit together comfortably, engages the students, and, ultimately, aid the vast majority of them to achieve deeper understandings of the topic. Within that broad prospect, the teacher can and should be encouraged to be as versatile as possible (Gardner, 1999, p. 209).

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Those who teach music could glean much from Gardner's theories. It would be a mistake, however, to assume that since one is involved in the teaching of music that whole brain is engaged. Though the music teacher might be teaching music, that teacher may not be teaching in a musical manner or accessing all of the intelligences. The following is a sample of the many possible teaching strategies that the "Gardner aware" music teacher might explore:

<u>TEACHING ACTIVITY</u>	<u>INTELLIGENCE PATHWAY</u>
Provide & Allow Verbalization	LINGUISTIC (paired with musical)
Explain & Perform Relationships	LOGICAL-MATHEMATICAL
Model Musical Performance	MUSICAL
Teach Music with Movement	BODILY-KINESTHETIC
Diagram Musical Concepts	SPATIAL
Sensitize Students to Conducting	INTERPERSONAL
Discuss Performance Feelings	INTRAPERSONAL
Allow Musical Introspection	EXTISTENTIAL
Explore the Natural Laws of Music	NATURAL