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Howard Gardner's theory of multiple intelligence and the implications for gifted education

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Abstract

This article, to be submitted to the national journal, *Gifted Child Today*, explores how Howard Gardner's Multiple Intelligences Theory (MI) specifically affects the development and delivery of gifted education. Included are discussions of the definitions on MI and giftedness programming and how each approach identification, curriculum and instruction. Three popular gifted education models are viewed through the lens of MI are Autonomous Learner Model (ALM), Talent Identification and Development in Education (TIDE) and Three Ring Conception of Giftedness.

Howard Gardner's Theory of Multiple Intelligence
and the
Implications for Gifted Education

A Graduate Review
Submitted to the
Division of Gifted Education
Department of Curriculum and Instruction
in Partial Fulfillment
of the Requirements for the Degree
Master of Arts in Education
UNIVERSITY OF NORTHERN IOWA

by
Cynthia Fell
August, 2001

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“Multiple Intelligences is the cure!” “Multiple Intelligences is the answer for our gifted program!” “All kids are gifted!”

Statements like these have echoed through the halls of schools across America and beyond as teachers and administrators tackle the task of providing appropriate education for gifted students. In 1972, a report by the U.S. commissioner of education stated that only 4% of gifted students received special services and half of the superintendents surveyed reported that they had no gifted students in their schools (Winner, 1996). In 1996, the reactions from teachers and administrators were at the opposite end of the spectrum, reporting that all of their students are gifted. (Winner, 1996)

The educational community has been asked to provide meaningful methods of identification, instruction, and curriculum development for the gifted population, but the journey has not always been smooth. With the evolution of Howard Gardner's Theory of Multiple Intelligences (MI), educators continue to explore the influences this theory has on the delivery of educational services in schools.

This article includes an examination of how MI specifically affects the development and delivery of gifted education and intends to give meaning to educating our brightest students.

This examination of MI is accomplished by reviewing three gifted educational models: Autonomous Learner Model (ALM) (Betts, 1999), Talent Identification and Development in Education (TIDE) (Feldhusen, 1995), and Three Rings of Giftedness (Renzulli, 1998a). It will examine the methods of identification, curriculum, and instruction as seen through the lens of MI. To understand where we are and where we are going, we first need to see where we have been.

An Overview of the Multiple Intelligences Theory

In his book, Frames of the Mind - The Theory of Multiple Intelligences, Gardner (1983) puts forth a definition of intelligence as “the ability to solve problems, or to create products, that are valued within one or more cultural settings - a definition that says nothing about either of the sources of these abilities or the proper means of testing them” (p. x). This definition is based on biological, psychological and anthropological evidence and uses eight distinct criteria for an intelligence to be considered. These eight criteria are as follows:

- 1) Potential isolation (of a particular faculty) by brain damage
- 2) The existence of idiot savants, prodigies, and other exceptional individuals
- 3) An identifiable core operation or set of operations

- 4) A distinctive developmental history, along with a definable set of expert "end-state" performances
- 5) An evolutionary history and evolutionary plausibility
- 6) Support from experimental psychological tasks
- 7) Support from psychometric findings
- 8) Susceptibility to encoding in a symbol system. (p. 63-66)

There are nine intelligences that have been identified as fitting the criteria stated above. A brief description of each intelligence is listed:

- (1) Linguistic intelligence is the ability to use language to express thinking and understand other people (Checkley, 1997).
- (2) "Logical-mathematical intelligence understands three broad interrelated fields: mathematics, science, and logic" (Campbell, Campbell & Dickensen, 1996, p. 35).
- (3) Spatial intelligence is to think in pictures and to perceive the visual world accurately in three dimensions (Shearer, 1999).
- (4) Bodily-kinesthetic intelligence is the ability to control one's body movements and to handle objects skillfully (Armstrong, 1999).
- (5) "Musical intelligence is the capacity to think in music, to be able to hear patterns, recognize them, remember them, and perhaps manipulate them" (Checkley, 1997, p. 12).
- (6) "Interpersonal intelligence is the capacity to understand and interact effectively with others" (Campbell, Campbell & Dickensen, 1996, p. xvi).

- (7) "Intrapersonal intelligence is to think about and understand one's self. To be aware of one's strengths and weaknesses and to plan effectively to achieve personal goals" (Shearer, 1999, para. 7).
- (8) Naturalist intelligence "has to do with observing, understanding and organizing patterns in the natural environment" (Campbell, 1997, para. 2).
- (9) Spiritual/existential intelligence is a form of intelligence that asks questions about existence. It enables those "to think about things too large or too small to see" (Price, 1998, para. 9).

In his book, Multiple Intelligences - The Theory in Practice, Gardner (1993) further expands his definition:

Intelligence is a biopsychological potential. Whether or not and in what respects an individual may be deemed intelligent is a product in the first instance of genetic heritage and psychological properties, ranging from cognitive powers to personality dispositions. Recent advances in cognitive studies suggest how best to conceptualize intelligence. (p. 51)

Gardner clarifies the term biopsychological potential by stating that "all members of the species have the potential to exercise a set of intellectual faculties of which the species is capable" (p. 36).

In his discussion on giftedness, Gardner (1993) defines it with the following statement:

Giftedness is a sign of precocious biopsychological potential in whichever domains exist in a culture. An individual who advances quickly, who is at promise in an available task area or domain, earns the epithet gifted. Individuals can be gifted in any area that is recognized as involving intelligence. (p. 51)

Research to Support the Theory of Multiple Intelligences

In the search for solid concrete scientific data that supports MI theory, there seems to be a deficiency of strong empirical research. The empirical studies that Gardner (1995) used to support the MI theory came from many scientific fields and can be revised upon new evidence; therefore he maintains “no empirically based theory is ever established permanently” (p. 20). Even by Gardner’s own admission, he asserts that “the MI theory was developed as a scientific theory not as an educational model” (1999a, p. 144). Because of this direction of MI theory development, Gardner (1983) “believes it is not possible to assess these intelligences in pure form....and while any person might exhibit certain intelligences, this picture is fluid and changing” (p. xxii).

Emig (1997) remarks in her article, “A Multiple Intelligences Inventory, in Educational Leadership, “that the empirical studies on learning indicate that students simply learn in different ways” (p.47). She feels this documentation supports the core of the MI theory.

Walters and Gardner (1988) undertook an empirical study, which was derived from the theory of multiple intelligences, to look at the crystallizing experiences in the discovery of intellectual gifts. They defined crystallizing experiences as “experiences which involved remarkable and memorable contact between a person with unusual talent or potential and the materials of the field in which that talent will be manifested” (p. 307). In her article, “The Development of Academic Talent: a Mandate for Educational Best Practice,” VanTassel-Baska (1998) helps to clarify the term, crystallizing experiences: “These crystallizing experiences emphasize the moment when an individual is able to realize that a powerful experience represents a direction to take and commitment to a lifelong pattern of work” (p. 762).

Walters and Gardner (1988) are “not trying to use crystallizing experiences as a critical variable but instead as an exploration of the MI theory through one method that would help give understanding to giftedness” (p. 329). Their findings support that these experiences occurred often but differences exist across individuals and domains. The one idea that they could support was that stimulating cognitive growth was greatest in domains that were relatively remote from everyday experiences. Their conclusion was that all children could have the potential for crystallizing experiences that may lead to the exploration of one of the intelligences.

In an article in Educational Leadership, Gardner (1997) talked about his newest research by stating that MI is not complete. He explained that our understanding of intelligence is ever changing and that new research about the brain and genetics will help advance the idea of looking at a person's intelligence as an on going and growing entity. He stated that "people will have a distinctive and changing intelligence profile. This profile will not be reached by a formula method but by versatile technologies being developed" (p. 21).

Gardner has endorsed other authors' interpretations of MI, for example: Armstrong (2000), Campbell, Campbell and Dickensen (1996), Shearer (1999). He feels that they have helped to create and construct connections between MI's theoretical framework into easily understandable applications (Wilson, 1998).

One of the developmental psychologists that Gardner is supporting is Shearer (1999) of Kent State University. Shearer has been awarded grants from the U.S. Department of Education to investigate how a multiple intelligence profile is used to enhance intellectual development and classroom instructions. After ten years of developing and refining, the Multiple Intelligences Developmental Assessment Scales (MIDAS) have been published. Shearer (1999) has created instruments that are claimed to be a practical and valid method of describing a person's MI profile in both descriptive and quantitative terms. The scales are methods of structured inquiry and reflection that allow a student,

teacher, or parent to describe a person's abilities, involvements and enthusiasms.

In a presentation to the 105th Annual Convention of American Psychological Association on August 15, 1997, Shearer (1997) presented his finding from three research studies he performed in the development of the MIDAS. In his discussion, he states that the results of these studies illustrate sound psychometric properties. The instrument evidenced moderate to high internal consistency across all studies and a strong test – retest reliability” (p. 7).

Critical Review of the Theory of Multiple Intelligences

Gardner is not the first, nor the only one, to claim that there are multiple intelligences. The literature talks about many theorists from Spearman's one intelligence to Guilford's 150 intelligences (Armstrong, 2000). In his research on the MI theory, Gardner (1983) has taken selections from a variety of independent research fields including anthropology, cognitive psychology, developmental psychology, psychometrics, biographical studies, animal physiology and neuroanatomy.

Gardner (1999b) states that “his theory is based on a process of studying and analyzing the collected information from many disciplines, especially from neurology, and then organizing it in a way that could be

understood" (p. 85). The synthesized empirical data is then used to support or refute the theory (Willard-Holt & Holt, 1998). He calls this subjective factor analysis. Gardner (1993) "isn't convinced that a (objective) factor analysis can really uncover intelligence unless it is based on considerations of culturally valued expertise" (p. 40). He feels that experts in each domain need to "satisfy themselves that they have really identified capacities that are important and valued in society" (p. 41).

Willard-Holt and Holt, (1998) state that critics of MI have questioned "the validation and application of MI theory as a bona fide theory of intelligence, as an empirically-based theory, and as a practical guide for schools" (p. 9). This has been the biggest criticism of the MI theory. Even by Gardner's (1993) admission, he explains, "while multiple intelligences theory is consistent with much empirical evidence, it has not been subjected to strong experimental tests within psychology" (p. 33).

Sternberg (cited in Willard-Holt, & Holt, 1998) also referred to the lack of empirical proof of the theory and felt that all the attention given to MI has taken the "focus away from the academic abilities in which American students are weak" (p. 8).

Because of the flexibility of using MI theory in the classroom, it has lead to the vulnerability of MI being misinterpreted and misapplied to educational settings. Hoerr (2000), in his book, Becoming a Multiple

Intelligences School, list several problems associated with implementing MI theory into the classroom:

Some of the potential trouble spots are (a) trying to incorporate all the intelligences into each lesson, (b) surrounding students with the various intelligences as good way to address MI, (c) not explaining MI to students and how it is being used, and (d) letting students always choose which intelligences they wish to pursue.

(p. 33)

Gardner (1997) adds that MI should not be used as a quick fix for educational problems, which leads to the assumption by the educational community that MI is an educational fad.

An interesting critique published on-line has taken Gardner to task on several points in his definition of intelligence. The critique was by Sempey, a Ph.D graduate from Temple University in Psychological Studies in Education. Sempsey (1993) feels that the eight criteria for an intelligence do not address the issue of environmental viability of behavior. He maintains that an essential element of intelligence must be acultural. He explains this as "a degree of adaptability to shifting environmental demands upon the organism or society at large" (para. 13).

Another question Sempey raises is the value base of the intelligences and the ramification that MI could have on the educational community, especially with the possibility of national standards.

Sempey (1993) wonders how this issue would be addressed in the development of curriculum and assessments from one local school district to another when each intelligence would have its own set of educational standards for each individual. "This would lead to each school exhibiting a sub-cultural bias in its curriculum and assessment of individual achievement" (para. 18).

Application of MI Theory into Educational Methods

In his latest book, Intelligence Reframed, Gardner (1999b) explains that the one educational concept that he feels is the most important for successful schools is that of individually configured education. He stresses that differences in students must be taken seriously. "This would mean learning about each child's background, strengths, interest, preferences, anxieties, experiences, and goals" (p. 151). With this information gathered, then educational decisions are made using this data. This concept is now in practice in schools with the special needs students as Individual Educational Plans (IEP), and with gifted students as Personal Education Plans (PEP) (Betts, 1999). The suggestion is that this practice be done with all students. Because MI is organized by a set of categories (nine intelligences) that describes a student's strengths and weaknesses, this is a good starting point for collecting information for an individualized profile for each student.

The state of Maryland has incorporated MI as one part of their state wide assessment model - the Maryland School Performance Assessment Program (MSPAP) (Yen & Ferrara, 1997). They incorporate three elements; (1) MI theory, (2) practices taken from Dimensions of Learning by Marzano (1992) and (3) portfolio assessment. From its own research, the state of Maryland found that MI helps students understand their abilities and helps them know how to use their strengths to learn. It builds their confidence to take educational risks by providing many sensory learning experiences. The MSPAP is a reliable source of information since it has been found to accurately assesses students' mastery of basic skills and higher-level content (Greenhawk, 1997).

Educators are starting to use the multiple intelligence theory as a tool to teach understanding of important questions, topics and themes to students. Gardner (1999a) contends that "a multiple intelligences perspective can enhance understanding in at least three ways" (p. 186). First is to engage students through multiple entry points of narrational, quantitative/numerical, logical, foundation/ existential, aesthetic, hands-on, and interpersonal, which Gardner aligns with his intelligences. The second is to give powerful analogies and metaphors to bridge the gap from the known to the unknown. The third is multiple representations of the core ideas. Of these three approaches to understanding, the third is the most complex for educators. It is a demanding task to decided how to convey the important features of a

demanding task to decided how to convey the important features of a theme, concept or phenomenon. With teachers being as versatile as possible, these three strategies help to deepen students' understanding of the curriculum being taught.

Gardner (1993) explains that education is at a turning point. Faced with issues such as authentic assessments, standardized testing, standards and benchmarks, early childhood research, career development, brain based research, distant learning, gifted education, voucher systems, cooperative learning, and multiple intelligences theory, just to name a few, the educational community struggles to make sense of their mission. The educational methods and strategies that are going to be used in the future will need to be noticeably different from just a few years ago. Gardner (1999b) asserts, "Education must justify itself in terms of enhancing human understanding" (p. 180).

Application of MI Theory into Gifted Educational Methods

In his book, Multiple Intelligences - The Theory in Practice, Gardner (1993) gives this definition of giftedness:

It is a sign of precocious biopsychological potential in whichever domains exist in a culture. An individual who advances quickly and who is at promise in an available task area or domain earns the title gifted. Individuals can be gifted in any area that is recognized as involving intelligence. (p. 51)

He adds his definition of domain as “ the discipline or craft that is practiced in a society” and a field as “a set of institutions and judges that determine which products with a domain are of merit” (p. 37).

In his discussion on giftedness in education, Gardner (1993) offers several points to consider: (a) The educational community must decide on what is giftedness in their particular culture. (b) The adoption of a developmental approach that recognizes children of different ages have different needs. (c) Decide what kinds of educational models will be provided to children. (d) Keep in mind that the child is a child first and more important than exhibited gifted characteristics. (e) Realize that there are cultural values that cause tension between equity and excellence especially in a time of limited resources. (p. 60-61)

MI Theory gives a framework with broad implications for the identification and education of gifted students. Gardner (1993) has established a developmental gifted matrix that ranks from intelligence, giftedness, prodigiousness, expertise, creativity, and ending with genius. Each of these categories are delineated by “(a) sphere (physical and emotional environment), (b) age focus, (c) domain/field status and, (d) relevant issues” (p. 55).

When designing gifted programs that address multiple intelligences, Willard-Holt and Holt (1998) recommend three areas to keep in mind:

- (1) Make sure that the identification criteria match the activities of the program. Some identification processes include areas not

addressed at all by the programming activities (e.g., Testing for creativity but the program is created for accelerated academic students with little chance for creative activities). (p.11)

- (2) Curriculum development for the gifted needs to be differentiated.

This refers to modifying the content of the curriculum by changes in the environment, content, process, pace and product. (p. 21)

- (3) Assessment should be in context, using a variety of methods (e.g. rubrics, work samples and portfolios) so that instruction and curriculum becomes a seamless (italics added) process.

(p.28)

By using the above MI recommendations for identification, curriculum, and instruction of gifted students, three popular gifted program models are explored. They are Autonomous Learner Model, Talent Identification and Development in Education, and Three Rings of Giftedness.

Exploration of Three Gifted Programs Models through the Lens of MI

Autonomous Learner Model

Betts (1985) defines an autonomous learner as “one who solves problems or develops new ideas through a combination of divergent and convergent thinking and who functions with minimal external guidance in selected areas of endeavors” (p.4). The major goal of the Autonomous

Learn Model (ALM) is “to develop independent and self-directed learners” (p. 14). The intent of ALM is to integrate the emotional, social and cognitive aspects of learning because many learners are bright but not motivated in school. This model uses the philosophy of casting a wider net to identify gifted learners (Betts, 1999).

MI also has used this philosophy in relationship to identification and education of the gifted and talented. It supplies a framework in which the notion of intelligences and giftedness is broadened “to include a much wider range of capabilities, reevaluate what counts as a gift, and consider how best to assess and nurture promise” (Ramos-Ford & Gardner, 1997, p. 60).

With the goal of identifying those students with promising abilities, Betts (1999) describes three different types of learners who have the potential of becoming autonomous. These are intellectually gifted, creatively gifted, and the talented.

Typical characteristics of the intellectually gifted are having a storehouse of knowledge, having a large variety of interests, being able to process information easily, and being able to learn information quickly and easily. Also “performing well on achievement or IQ tests and by high school age, these learners tend to conform to school structure and not be risk takers” (p. 17).

Characteristics for those who creatively gifted are “divergent thinking abilities...acute sense of humor...little tolerance for boredom...

spontaneity and expressive demeanor...seek the unknown... thrive on risk taking... adventurous, high energy... and often unable to stay on task” (p. 18). The creatively gifted learner sees multiple answers to questions and therefore does not always do well on testing measures but will score higher on measurements of creativity than most students. Observation of this learner through performances and products will help identify this type of giftedness.

The talented learners are those who have developed expertise in one specific area. Characteristics that identify this type of learner are a “strong drive or motivation to absorb and learn everything about the area of interest and it becomes a lifelong passion” (p. 18). To identify this type of learner through observation and performances allows educators to look at a broader segment of the school population.

Gardner suggests that the nine intelligences are autonomous but that they can interact. The implications for the gifted and talented students are that they will differ in the areas in which they are considered talented and gifted. This supports the notion that IQ tests measure for general intelligences, which would be a limited way of viewing a child's ability and talent (Ramos-Ford & Gardner, 1997). This assumption supports Betts's use of types of learners. It is especially compatible with the talented learner type that takes into account Gardner's (1999b) discussion of motivation.

If one is motivated to learn, one is likely to work hard, to be persistent, to be encouraged by obstacles, to be curious, to take risks in unfamiliar directions, to continue to learn without pressure to do so or stretching one's faculties in unfamiliar directions. (p. 76)

Betts (1999) and Gardner (1999b) agree on the collection of information into a student profile. In the Autonomous Learner Gifted Behavior Profile, there are several data collecting instruments. The first one is the Autonomous Learner Rating Scale that lets each student rate themselves as to their learning types.

These six types are successful (i.e., likes school and want to please), challenging (i.e., non-conforming to learning systems), underground (i.e., hides abilities), dropout (i.e., resentful and angry), twice exceptional (i.e., learning or physically disabled and gifted), and autonomous learners (i.e., learns in school, keeps independence and creativity). (p. 29-32)

Along with the ALM behavior profile, there is an extensive student application, responses to student interview questions, teacher recommendations, standardized tests scores, other school assessments, and a student needs assessment. With some modification, the behavior profile could be used in the regular classroom (Betts, 1999).

In the 1980's, Gardner (1999b) collaborated in the development of Spectrum classrooms. This approach to assessment was to be

accomplished through observation of student working with materials in the various intelligences. The Spectrum profile Gardner (1999a) describes is a document, which explains a child's strengths and weaknesses and suggests activities to encourage the child's personal development along various pathways. Gardner (1999b) explains "by taking the assessment to the child and creating an environment with inviting resources, let the child demonstrate his or her spectra of intelligences in as natural a fashion as possible" (p. 137).

Betts (1999) has revised and organized ALM curriculum and instruction into five dimensions and within each dimension there are a number of topics, issues, skills, and activities, projects or methods that are addressed. In the revision, several dimensions address Gardner's Multiple Intelligences. A review of the dimensions will show the MI connections.

Orientation.

Four areas are addressed in this dimension. They are

1. understanding giftedness, talent, intelligence and creativity.
2. group building activities,
3. self and personal development,
4. school opportunities and responsibilities. (p. 79)

Individual Development

Six areas are addressed in this dimension. They are

1. interpersonal and intrapersonal (develop self concepts, understand abilities and develop social skills),
2. learning skills (creative and critical thinking, problem solving, decision making skills and futures thinking,
3. technology (computers, software, Internet, CD ROM, multi-media and long distance learning) and
4. college and career involvement
5. organizational skills,
6. productivity (passion learning, project planning, product selection, self/project assessment. (p. 138)

Enrichment

Five areas are addressed in this dimension. They are explorations, investigations, cultural activities, service, and adventure trips. (p. 264)

Seminar

Five areas of explorations in this dimension are futuristic, (e.g. technology development), problematic, (e.g., funding source for research or terrorism), controversial (e.g., capital punishment or abortion), general interest (e.g., personal areas of interest) and advanced knowledge (e.g., viruses or computer languages).

(p. 286)

In-depth study

This dimension is a culmination of the other four dimensions and, when coupled with passion area of study, the student accomplishes the goal of becoming an autonomous learner. Four steps need to be attended to in an in-depth study. They are individual or group project, mentorship, presentations and assessment. (p. 302)

Betts (1999) suggests that the first two dimensions would be appropriate for all learners. He suggests that the "orientation dimension be integrated into the entire classroom. Emphasis is not placed on understanding giftedness, but on understanding multiple intelligences, creativity, and talent within all children" (p. 14). This is highlighted by an activity in which students complete a MI worksheet using a scale of one (not like me) to five (most like me) for eight statements in each of the intelligences. Scores are added and applied to a Multiple Intelligences Profile Grid. This allows students to discuss the different intelligences and how each prefers to learn.

In the individual development dimension, "time and energy are spent on skills which are seen as essential for all children" (p. 14). These skills emphasis understanding self through interpersonal and intrapersonal activities like, developing a Lifelong Notebook, The Six Selves and incorporating gathered information into a Personal Educational Plan. There is a strong correlation to MI's Interpersonal and

Intrapersonal Intelligences. ALM gives students a way to experience and think about these intelligences as they explore the social and emotional aspects of learning through the ALM activities.

The final three dimensions are specifically designed as ways to differentiate curriculum for identified gifted and talented students and to give opportunities by using the “MI as a catalyst to find what is best in each child and for each child” (Ramos-Ford & Gardner, 1997, p. 64).

Talent Identification and Development in Education (TIDE)

In Feldhusen's model of Talent Identification and Development in Education (TIDE)(1995), he suggested that “there are problems with the gifted concept and [he] asks that schools stop using the term gifted” (p.1). He argues that giftedness implies hereditary transmission and “a mature power rather than a developing ability” (p. 3). He believes the role of educators is not to trace the origins of giftedness. Instead, they are to “(a) search for talent or strengths in all children, (b) search for those who have high levels of talent in worthwhile areas of human endeavors, and (c) seek to provide the differentiated instruction so all students can develop their talents to the fullest” (p.1).

Feldhusen's (1995) talent categories, which correlate with the majority of categories in MI Theory, are:

- (1) Academic- Intellectual (science, math, English, social studies, languages)

- (2) Artistic (dance, music, drama, graphics, sculpture, photography)
- (3) Vocational-Technical (home economics, trade-industrial, business-office, agricultural, computers and technology)
- (4) Interpersonal-Social (leadership, care giving, sales, human services). (p.14)

Feldhusen (1995) asserts that these categories correspond with regular educational curriculum areas thereby helping to facilitate the identification of talents “Teachers can be trained to structure educational activities and opportunities in their classrooms to enable youth to reveal their talents” (Feldhusen, 1997, p.190). This would be accomplished by observance of behavioral signs of giftedness and talent during classroom instruction with all children (Feldhusen, 1995).

Both Feldhusen (1996) and Gardner (1991) agree on the issue of identification. Identification is more effective if done by observation over a long period of time and that education needs to provide learning situations that give opportunities for students to show emerging talents as early as possible.

Although TIDE does included elementary services on a list entitled, Talent Development Services, these services are fewer in number and lack explanations. (e.g., Under the heading Pullout, separately listed, are IEP's [sic] and cluster groups.) (Feldhusen, 1995, p.31). (A cluster group is a group of gifted students placed with a class of regular students.) In several sources, Feldhusen (1995, 1997) does suggest that the four

general domains of talent development of TIDE are more effective at the middle school and high school level. Whereas with MI, there has been much written about the assessments, instruction, and curriculum that are used to identify intelligences at an early age.

Chapters from Gardner's publications (1991, 1993, 1997, 1999) indicate viable ways to initiate MI into the educational community at an early age of the child. Gardner (1999a) also gives direction for middle schools and secondary schools by suggesting the "emphasis is placed not on a fixed curriculum but on getting students to think deeply and use their minds well" (p. 109). He encourages the core subjects to be taught by interdisciplinary teams with assessments based on performances and exhibitions of what the student has synthesized from his or her learning.

Feldhusen's debate with Gardner is that the MI Theory does not yet show specific and valid research, but he praises Gardner for using the word talent when talking about educational programming based on MI theory (Feldhusen, 1998).

One concern with the TIDE model is Feldhusen (1997) has not set up a clear method for identification. He lists a variety of checklists, tests, inventories developed by others including Gardner, Project Spectrum observation method and Renzulli's behavior scales.

The objectives of the TIDE approach to programming are:

- (1) Giftedness is not a unitary trait.

- (2) Children are characterized best by their specific talents, aptitudes, strengths, and interest.
- (3) Educational programs should individualize their services as much as possible to address individual talents.
- (4) Precocious youth with highly advanced levels of talent require accelerated and advance learning experiences. (p. 23)

Feldhusen (1995) has put forth these objects for guidance in the instruction and curriculum for talent development in schools. He then lists an assortment of instructional strategies and curriculum options. At the end of the list, he declares, "there is no single program model that addresses the needs of all talented youth" (p. 28). Unfortunately, Feldhusen gives few directions as to how the educational community is to achieve those objectives for all talented youth and that it is up to the school to develop a variety of options. Feldhusen (1995) and Gardner (Ramos-Ford & Gardner, 1997, p. 60) also agree that not all children are gifted or talented. On the other hand, they both suggest broadening the definitions of gifts and talents, which would give wider range to identify those with high abilities in a variety of areas.

Three Rings of Giftedness

Renzulli and Reis (1997) declared the term gifted should be used as an adjective and even then, only in the developmental perspective. Their

view suggests that education should be developing gifted behaviors in specific areas of learning and human expression rather than giftedness as state of being.

They furthermore state, "giftedness is not seen as all-or-nothing, but rather as one that emerges and subsides as specific interests are pursued and satisfied....giftedness is characterized by three attributes: high general intellectual ability, task commitment, and creativity" (Coleman & Cross, 2001, p. 348).

Renzulli (1988) identifies this theory as the Three-Ring Conception of Giftedness. These set attributes (traits) can lead to any number of potentially valuable areas of human performances (Davis & Rimm, 1998). Renzulli (1988) points out that "all traits need not be present in any given individual or situation to produce a display of gifted behaviors.... gifted behaviors take place in certain people, at certain times, and under certain circumstances" (p. 75).

High intellectual ability is divided into two components. Renzuilli (1988) defined the first as:

general abilities that consist of the capacity to process information, to integrate experiences that result in appropriate and adaptive responses in new situations, and the capacity to engage in abstract thinking. Examples of general abilities are verbal and numerical reasoning, spatial relations, memory and word fluency. (p. 66)

These abilities are part of traditional schooling and can be measured by aptitude and achievement tests. The second is defined as “specific abilities that represent the ways in which human beings express themselves in real-life. Many specific abilities can not be measured by testing therefore performance-based assessments would be used to identify these abilities” (p 66).

In the description of task commitment, Renzulli (1988) relates that this trait is “a refined or focused form of motivation....The terms that are most frequently used to describe task commitment are perseverance, endurance, hard work, dedication [to] practice, and self confidence” (p. 69). Maker & Nielson (1995) add to this definition of task commitment as “a focused commitment and ability to take energy and concentrate it on something very specific...when it is of their own choosing and not in a teacher-designed task” (p. 167).

Gardner concurs with Renzulli's view of motivation. In his book, The Disciplined Mind, Gardner (1999a) feels that motivation is crucial to learning. He explains that:

If one is motivated to learn, one is likely to work hard, to be persistent, to be encouraged by obstacles, to be curious, to take risks in unfamiliar directions, to continue to learn without pressure to do so or stretching one's faculties in unfamiliar directions. (p. 76)

Renzulli's third attribute of giftedness is creativity. He described creativity as the:

Ability to look at problems in new and unusual ways, to generate a large number of ideas, and to challenge the existing ways of doing things (in school and in a field of study). Also included are the characteristics of being thoughtful and playful with ideas, being willing to take risks, being original in thinking, having ingenuity, and having the ability to set aside established conventions and procedures when appropriate. (as cited in Maker & Nielson, 1995, p. 168)

In his book, Multiple Intelligences: The Theory in Practice, Gardner (1993) gives his definition of creativity: "a characterization reserved to those products that are initially seen to be novel with a domain but that are ultimately recognized as acceptable within a appropriate community" (p. 51). Gardner (as cited in Piirto, 1998) adds that creativity is part of each intelligence or ability. In Intelligence Reframed, Gardner (1999b) continues his definition of creativity by stating that creativity differs from intelligences in two ways. "First, creative individuals always work within a specific domain, discipline, or craft. Second, a creative person must affect a domain" (p. 117).

According to Renzulli (1988), task commitment and creativity are not fixed traits. They cannot be assessed by objective testing

(achievement or aptitude). Three variables need to be taken into consideration when trying to determine these traits:

1. Performance is characterized by peaks and valleys.
2. They can be developed through appropriate stimulation and training.
3. One usually stimulates the other. (p. 86)

After analyzing the recent research literature, Renzulli (1998a) stated two conclusions that need to be examined in the development of a definition of giftedness. The first was "that intelligence is not an unitary concept...there are many kinds of intelligence and single definitions cannot be used to explain this concept" (para. 8). The second conclusion was that "there is no ideal way to measure intelligence" (para. 11). This analysis also has focused his attention on "two broad categories... schoolhouse giftedness...and creative-productive giftedness" (para. 11). Three points were emphasized, "that both types are important, there is usually an interaction between the two types, there is an interaction between the two types, and special programs should make appropriate provisions for encouraging both types of giftedness" (para. 12).

Renzulli, Smith, White, Callahan, and Hartman (1976) developed Scales for Rating the Behavioral Characteristics of Superior Students (SRBCSS). In an article entitled, Myth and Reality: A Review of Empirical Studies on Giftedness, Ziegler and Raul (2000) found studies that showed that SRBCSS scales were the identification instruments most

often used when examining the interaction of high achievements, unusual talent, and high levels of motivation. Of the ten SRBCSS available, the four most widely used are intellectual ability (learning), creativity, motivation, and leadership (Davis & Rimm, 1998). The other scales evaluate artistic, musical, dramatics, communication-precision, communication-expressiveness, and planning characteristics (Renzulli, et al, 1976). According to Piirto (1998), these scales have been revised in 1990s and should be used for assessing these traits. "No checklist that has not been re-normed in ten years should be used" (p. 116).

Renzulli (1998a) also contended that there are two major implications for identification practices of gifted education. "First, an effective identification system must take into consideration other factors in addition to test scores" (para. 27). Second, a "reexamination of identification procedures that result in a total pre-selection of certain students and the concomitant implication that these young people are and always will be gifted" (para. 28) should be conducted.

In the article, Giftedness from a Multiple Intelligences Perspective, Ramos-Ford and Gardner (1997) examines MI's approach to assessment as a conscious move away from traditional testing. It is understood that the value of using standardized testing as one method to identify gifted individuals but Gardner also endorses other factors that need to be incorporated in the assessment process. These include ecological validity, intelligence fair assessment, and working styles.

Gardner's (1993) definition of ecological validity is "when individuals are assessed in situations that more closely resemble actual working conditions" (p. 175). Ecological validity supports assessments that are done over a long time period with a variety of materials and activities to identify strengths in specific domains. Ramos-Ford and Gardner (1997) contend that intelligence-fair assessments are those instruments that are directly tied to each intelligence and "would allow a direct look at that intelligence in-operation" (p. 58). In addition, they define working style by how the intelligence is approach by each individual. Qualities that are considered are level of engagement, persistence, and distractibility as the person interacts with the materials of that particular domain. This "enables the observer to compare a child's mode of attack across tasks" (p. 59).

It is then suggested that there be a compilation of assessment materials, over time, that are put into a portfolio that shows a meaningful collection of the students work, both in process and the best examples (Ramos-Ford & Gardner, 1997). This way, curriculum and assessment go hand in hand to form a student's profile.

This process corresponds with Renzulli and Reis's (1997) description of the Total Talent Portfolio (TTP). The TTP approach "is to target specific learning characteristics using both traditional and performance-based assessment to compile information about...the learner's abilities, interest, and learning styles" (p.145). The intent of the

TTP is to discover and record the student's best work and how best to nurture the student's talent. From the collection of this information, students who perform at high levels on standardized tests (85% or better) and show high ability on performance-based assessments are considered part of a talent pool which can include 15 to 20 percent of a school's student body (Renzulli, 1988).

“In 1977, Renzulli's Enrichment Triad Model (Triad Model) was developed specifically to provide differentiated education for gifted students” (Maker & Nielson, 1995, p. 163). When this model was first introduced, it was implemented almost entirely with elementary students but in the subsequent years it has been proven effective with middle school (Renzulli, 2000) and secondary schools (Renzulli, 1998b).

The Triad Model was designed to encourage three types of enrichment. Type I enrichment is to promote the creative productivity of young people by exposing them to various topics, areas of interest, and fields of study. Type II enrichment is for training the development of thinking and feeling processes and skills. Type III enrichment is individual or small group investigation of real problems (Renzulli & Reis, 1997). Type III is the “major focus of the Triad Model for gifted students and the most appropriate activity for developing gifted behaviors” (Maker & Nielson, 1995, p. 171). With Type III activities, “the gifted young person becomes a researcher investigating a real problem or an artist

creating...an original product. Students should act as producers of knowledge and art” (Renzulli & Reis, 1997, p. 149).

In his book, The Disciplined Mind, Gardner (1999a) talks about four approaches to understanding. They to relate loosely with Renzulli's enrichment Types I, II, and III. The four approaches are:

- 1) Learning from suggestive Institutions. (e.g. apprenticeships)
- 2) Direct Confrontations of Erroneous Conceptions.
(Challenges and defenses to deeply held beliefs)
- 3) A framework that facilitates understanding.
- 4) Multiple Entry Points to Understanding. (p.126)

Renzulli explains that “Type I and Type II activities are valuable for – and should be used with – all students” (as cited in Davis & Rimm, 1998, p. 147). This has lead to the development of the Schoolwide Enrichment Model (SEM), which is an adaptation of the earlier Revolving Door Identification Model (RDIM) (Renzulli & Reis, 1997, p. 138).

All of these models are a blend of identification, curriculum and instruction.

Reflections, Conclusions & Recommendations

Critique of MI in Gifted Education

Willard-Holt and Holt (1998) list several possible threats to gifted education with the introduction of the MI theory. The widespread concept of anti-intellectualism has caused a societal movement toward

mediocre levels of achievement in gifted programs. Educational partners, who agree with MI concepts, might attack and eliminate programs for the gifted and talented by claiming all children are gifted through the pretense of multiple intelligences.

Delisle (1998) has challenged the theory of multiple intelligences stating that it has watered down the essence of gifted education by leading the public to believe that "all children are gifted at something" (Delisle, 1999). Willard-Holt and Holt (1998) also raised the point that if schools broaden their identification criteria to include MI, then they will need additional resources.

Another point to consider is that there is still no widely available assessment tool to help with the identification of each of the intelligences. The Multiple Intelligences Assessment Tools (MIAT) (Fasko, 2001) being developed for the Support to Affirm Rising Talent (START) program, (Callahan, Tomlinson, Moon, Tomchin, & Plucker, 1995) has problems with validity and bias.

Also, MI has been viewed as "fad-like" instead of authentic in helping teachers and students develop talents (Fasko, 2001). Reasons for this could be that educators do not completely understand the philosophy behind the theory of multiple intelligences, that there is no comprehensive staff development of multiple intelligences, and MI looks like a quick fix.

With the recent pressures of national standards and state tests in education, the question has been raised about the ability of multiple intelligences theory improving test scores. When looking at the research, Latham (1997) states that scores did go up but there was no control group for comparison, which means the study has no validity. If the goal is "to simply improve test scores, MI may work no better or worse than other theories" (p. 85). In the article, An Analysis of Multiple Intelligences Theory and Its Use with the Gifted and Talented by Fasko (2001), it is stated that "for legal, educational, and ethical reasons, performance assessments used for high stakes purposes such as identifying potentially talented students, there needs to be reliable, valid, appropriately normed, and equally fair to students regardless of gender and ethnicity" (p. 128).

Support of MI in Gifted Education

Because of the successful introduction of MI theory into the educational climate of schools, educators have new views about curriculum and instruction. This has also been true for gifted education.

By using curriculum and instruction as a process working together, students are exposed to a variety of materials used in meaningful ways to give a comprehensive picture of their strengths. With this in mind, the identification and instruction of gifted and talented students can use MI as a framework that can

broaden the ideas of intelligence and giftedness. This can include a wider range of abilities, support and encourage areas of promise, and find for achievement in many different domains (Ramos-Ford & Gardner, 1997, p. 58).

Gardner (Ramso-Ford & Gardner, 1997) does not “suggest that every children should be considered gifted in the traditional sense” (p. 60). Instead, it is the task of educators to discover the strengths of each child and “build bridges where the child shows less interest or skill” (p. 60). As MI programs are influencing instruction, there needs to be an effort “to blur the line between assessment and curriculum. With the MI assessment approach, many more children will likely be identified as at promise and it should take place at a very early age” (p. 65).

Willard-Holt & Holt (1998) give these five issues for support of MI and gifted education. First, using MI as an identification model, students of undeserved populations would have their strengths considered. Second, “by broadening the identification procedures and allowing students to demonstrate their strengths through assessments in addition to paper and pencil tests, gifted programs will locate talents in more children” (p. 39). Third, “explaining MI to children and allowing them to explore their own talents will encourage higher self-esteem and appreciation for those who have gifts in other areas” (p. 39). Fourth, talents may be nurtured by using MI in conjunction with established

curriculum differentiation techniques. Fifth, "assessment of content mastery also must allow for multiple types of performance" (p. 39).

Final Thoughts

Upon careful review of the literature, I believe the educational community needs to tread carefully when considering MI as a gifted education program. After twelve years of immersion in gifted education, the two main problems are in the areas of resources and identification. Because of the multitudes of intelligences, the identification process could be overwhelming and cost prohibitive. To provide services to the host of students who demonstrate "giftedness" in any intelligence, already financially burdened schools would have problems finding resources to meet these needs. It seems that the public often looks for a quick fix but the educational community must remember that "MI ideas and practices cannot be an end in themselves; they cannot serve as a goal for a school or an educational program. Rather, every educational institution must reflect on its goals, mission and purposes continuously...Only after such reflection can MI ideas be usefully implemented" (Gardner, 1999b, p. 143).

As a coordinator and teacher of gifted students, I welcome MI as another tool to use to help see the whole picture of a student. I have found that when I explain MI to gifted students, they are able to explore their own talents which in turn encourages their self-understanding and

self-esteem. It also helps them to appreciate the gifts of others as they travel the educational road.

I have also found that conversations with teachers in my school on ways to apply MI to curriculum with gifted students have been beneficial. MI gives classroom teachers the framework to create clearly differentiated curriculum for integrated units. They feel that MI is a tool that can be adapted to a variety of curricular situations. They have become empowered, more proactive and have branched out to apply MI with all students in their classrooms.

One positive method is to start with a MI study group of interested teachers then working up to a whole district staff inservice. A school can look at their mission and goals and then see if MI would fit. With the push for school reform, this would be a viable solution to transform our schools.

The broadening view of gifted education through the lens of the MI Theory is a documented reality. As education steps into the twenty-first century, MI should be one of the tools used to show students the way to greater understanding of the world around us. Careful examination of how MI specifically affects the development and delivery of gifted education and how it can give meaning to educating our brightest students is necessary at regular intervals to maintain the integrity and quality of our gifted education programs.

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Appendix A

Gifted Child Today Writers' Guidelines

Gifted Child Today is a quarterly publication for parents, teachers, and other professionals who are interested in gifted education. Manuscripts may address all areas of gifted education that pertain to practices, policy, or applications of research.

Gifted Child Today is a peer-reviewed publication. The editor refers manuscripts to qualified reviewers who have expertise in a specific area. Reviewers' comments are then provided to the author by the editor. To avoid delay in the publication process, the author should follow these instructions:

1. Manuscripts should represent only original work that has not been published previously or is not being considered for publication elsewhere. If copyrighted material is used, copies of letters granting permission for publication should be included.
2. Manuscripts should be between 2,000 and 10,000 words long.
3. References should follow the APA style as outlined in the fourth edition of the Publication Manual of the American Psychological Association.
4. Send four copies of the original manuscript. They should be typed, double-spaced on one side of the page only. Each page should be labeled with the page number and the working title in the upper

- right-hand corner. They should be sent on letter-bond paper or heavier. Manuscripts should include at least a one-inch margin around each page. In addition to a title page, a cover page must be attached that includes the author's name, title, school and program affiliation, and home and work addresses, phone numbers, and fax numbers.
5. Place tables, figures, illustrations, and photographs on separate pages. Illustrations must be in blank ink on white paper. Photographs must be glossy prints, either black and white or color, or transparencies. Each should have a title.
 6. Include a full reference for each citation that is mentioned in the text on a separate sheet at the end of the manuscript.

Authors of accepted manuscripts must transfer copyright to Gifted Child Today, which holds copyright to articles and reviews.
 7. Upon acceptance, the author must submit a brief 50-100 word biography. Final copies of the manuscript are to be prepared along with a hard copy and a diskette. On the outside of the diskette the author should indicate the type of computer, the word processing program used, title of the article, and file name.

Susan Johnsen, Ph.D., editor Baylor University, School of Education P.O. Box 87304 Waco, TX 76798-7304 (254) 710-6116.

Appendix B

Biography

Cynthia Fell is the Gifted Coordinator for the St. Ansgar Community School in St. Ansgar, Iowa, a position she has held since 1989. She received her B. A. degree in Art Education in 1970 and her MAE degree in Gifted Education in 2001 from the University of Northern Iowa in Cedar Falls, Iowa. She is the faculty advisor to the St. Ansgar High School National Honor Society as well as organizing many after school academic enrichment activities for middle school students.