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Multiple Intelligences or Multiply Misleading:

The Critic's View of the Multiple Intelligences Theory

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Abstract

Howard Gardner's Multiple Intelligences (MI) theory has been widely accepted in the field of education for the past two decades. Most educators have been subjugated to the MI theory and to the many issues that its implementation in the classroom brings. This is often done without ever looking at or being presented the critic's view or research on the theory. This literature review discusses the critic's view of the Multiple Intelligences theory within the field of psychology and education.

Multiple Intelligences or Multiple Talents:
The Critic's View of the Multiple Intelligences Theory

Introduction

Howard Gardner's Theory of Multiple Intelligence (MI) is widely accepted within the field of education today, but it is not without criticism. Most teachers new to the profession have gone through their pre-service credentialing classes being extensively exposed to the MI theory, which has led to MI being generally accepted in the field of education for the last two decades. Teachers and administrators alike have been incorporating MI into their instruction and teaching pedagogy.

Like many constructivist/progressivism educational theories out there today, which Gardner's MI theory fits nicely within (Traub, 1999), they are often accepted based on antidotal evidence, because of the theory fits one's personal ideological views, or even based on the emotional desire for equality.

This paper will look at the critic's view of the MI theory from within Gardner's own field of expertise (psychology) and within the field of education. The defenders of (or evidence for) the MI theory will not be presented in this literature review, except for a brief overview of the theory itself. The main justification for this is that most educators have already been exposed to the MI theory in a favorable light.

Theoretical Framework of the MI Theory

Intelligence is defined as "the ability to modify and adjust one's behaviors in order to accomplish new tasks successfully. It involves many different mental processes and may vary in nature depending on one's culture." (Ormrod, 2006, p. 140) But, Harvard psychologist Howard Gardner, the founder of the MI theory, defines intelligence as "a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture." (as cited in Willingham, 2004, p. 19)

The difference between the two definitions is that instead of intelligence being limited to cognition or thought, Gardner broadens it by including "effective use of the body and thinking skills relevant to the social world...[and] extends the functionality of intelligence to include the crafting of useful products, not just the solving of problems." (Willingham, p. 19)

Historically, intelligence has been measured through the "IQ" test which is a general measure of one's cognitive function, but in 1983 Gardner challenged this system in his book *Frames of Mind*. Gardner suggested that "intelligence has more to do with the capacity of solving problems and fashioning products in a context-rich and naturalistic setting." (as cited in Armstrong, 2000, p. 1) Gardner developed his MI theory based on

at least seven basic intelligences. More recently Gardner added an eighth and a possible ninth to his theory. (Armstrong)

The different types of intelligences are as follows: 1. Linguistic Intelligence: the ability to use language effectively. 2. Logical-Mathematical Intelligence: the ability to reason logically, especially in mathematics and science. 3. Spatial Intelligence: the ability to notice details of what one sees and to imagine and manipulate visual objects in one's mind. 4. Musical Intelligence: the ability to create, comprehend, and appreciate music. 5. Body-Kinesthetic Intelligence: the ability to use one's body skillfully. 6. Interpersonal Intelligence: the ability to notice subtle aspects of other people's behaviors. 7. Intrapersonal Intelligence: the awareness of one's own feelings, motives, and desires. The eighth and newest one is Naturalist Intelligence: the ability to recognize patterns in nature and differences among various life-forms and natural objects. (Ormrod, 2006, p. 145) Gardner has also mentioned a possible ninth intelligence of spiritual intelligence (or existential intelligence), but has not included it officially in his theory. (Smith, 2002)

Gardner's MI theory, as stated in Ormrod's book, *Educational Psychology*, is that all students may be intelligent in one way or another, even though that intelligence manifests its self

differently in different cultures. Ormrod further discusses that "educators have wholeheartedly embraced Gardner's theory of multiple intelligences because of its optimistic view of human potential." (p. 145) One can easily make the connection that the MI theory fits quite nicely into the constructivist or progressive, "child-centered" theories and pedagogies.

Research Studies and Scholarly Works

Criticism of MI within Gardner's Field of Psychology

Gardner's MI theory is based on the premise of a modular picture of the brain that is today widely accepted in neuroscience, particularly that, "mental activities are parceled out into various regions of the brain, and are more autonomous from one another than previously thought." (Traub, 1999, p. 56) But, one of the biggest criticism of MI is the premise by psychometricians that Gardner has not conducted any empirical research to test that his "intelligences" are indeed autonomous faculties, opposed to what most neuroscientists (even those who are sympathetic to Gardner's model) continue to believe in the "central processing capacity, with has traditionally been called 'general intelligence' or 'g'." (Traub, p. 56)

Willingham, a professor of psychology at the University of Virginia, has been one of Gardner's most vocal critics in his field of psychology. Willingham (2004) contends that Gardner

makes three distinct claims through his MI theory regarding intelligence. First, Gardner offers a new definition of intelligence (as previously discussed). Second, Gardner claims to have identified some of many types of intelligence. Third, he claims these identified intelligences operate independent from each other.

Willingham (2004) states that Gardner has incorrectly claimed psychometricians believe in intelligence as a unitary trait (g directly relating to all performance), which was widely accepted in the early 20th century. Willingham then discusses that Gardner's MI theory is an adoption of the multifaceted view of intelligence (there is no g, only independent intelligences that relate to performance) which emerged in the 1930s.

More importantly, Willingham discusses the fact that a massive review, by the late University of North Carolina scholar John Carroll, published data collected over the course of 60 years from 130,000 people around the world, supports a hierarchical model (g is directly related or at the head of separate cognitive processes that lead to performance). This hierarchical view of intelligence is actually today's dominant view by psyschometricians, which also notes Willingham, is not theory, but patterned by the data.

Willingham also discusses another problem with Gardner's MI theory is that it does not fit within the pattern of the data. Therefore, it can not be a valid theory of intelligence. Willingham further points out that the past 100 years of data consistently shows that performances on intellectual tests are correlated. Therefore, if g doesn't exist then Gardner needs to, in some way, account for performances on intellectual tasks being correlated.

Willingham also dissects Gardner's criteria for intelligence identification. Willingham's main complaint concerning Gardner's criteria is that many of the separate intelligences share many of the same cognitive processes, which by Gardner's criteria, are often considered separate intelligences. Moreover, Willingham states that by using Gardner's identification process, argument could be made that there is humor intelligence, memory intelligence, an olfactory intelligence, a spelling intelligence, and Gardner's spatial intelligence could be broken further down into near-space intelligence and far-space intelligence.

White (2004) of the Institute of Education at the University of London makes the same argument as Willingham does concerning Gardner's criteria for categorizing intelligence. White starts his criticism by stating that "philosophers and

psychologists have agreed with common sense that intelligence has a lot to do with being flexible in pursuit of one's goals…[and]…there are as many types of human intelligence as there are types of human goal." (p. 2) White further states that "Gardner has corralled this huge variety into a small number of categories." White then goes on to dissect MI, coming to the same conclusions as Willingham (2004).

Carson (2003), Senior Research Analyst for the Office of Institutional Effectiveness at Kaplan University, answers the question of why Gardner's MI theory has had little impact on psychology. Carson discusses five specific points: "he has ignored almost all research and theory contributed by vocational psychologists; despite all the books, there has yet been relatively few serious, empirical, theory-testing publications of MI theory; he tends to make broad claims about how his MI theory makes sense and seems to imply that competing theories—and theories of g in particular—are lacking in substance…this despite decades of empirical research supporting the latter; he almost never collaborates or interacts with other psychologists; and he seems romantically inclined rather than philosophically inclined."

McGuiness (2007) points out that Gardner's MI theory is not unique because "other psychologists have 'identified' up to 150

[intelligences]—but Gardner claims (among other things) that each of his 'intelligences' can be localized to a particular part of the brain, and that they are entirely separate entities, He explicitly denies the existence of any type of 'general' intelligence."

McGuiness then goes on to discuss the findings in *Gifted Child Quarterly* (by Guskin, Peng, & Simon, 1992) which "showed that children who scored highly on one 'intelligence' tend to score highly on some others: this is exactly what you would expect if there was some kind of 'general' intelligence and is what you would not expect if these 'intelligences' were all separate and distinct."

Collins (1998) points out that some of the strongest doubts of Gardner's MI theory is Gardner himself. Gardner States, "The most I can hope to accomplish here is to provide a feeling for each specific intelligence." Gardner goes on, "I am painfully aware that a convincing case for each candidate intelligence remains the task of other days and other volumes." (as cited in Collins) Collins goes on to discuss how Gardner states that work needs to be conducted and tested in the fields of biology and cognitive science before it is put into practice. Collins then states, "...in the 15 [now over 20] years since *Frames of Mind* was published, those other volumes have never appeared."

Gardner (2003) continues to cast further doubt in MI when he discusses how he came to name his theory, "I decided to call these faculties 'multiple intelligence' rather than abilities or gifts. This seemingly minor lexical substitution proved very important; I am quite confident that if I had written a book called 'Seven Talents' it would not have received the attention that *Frames of Mind* received." (p. 3)

Morris (2008) gives a list of various established writers and professors with in the field of psychology that disagree with Gardner's MI theory, making the same points previously discussed, namely, that Gardner's "efforts [are seen] as often simply constructed efforts to represent a general framework, or taxonomy," and that "Gardner ignores the evidence and does not deal well with the concept of 'g', or general intelligence. Nor do they feel that he deals with the view of mental ability held by the majority of working psychologists, namely the hierarchical model."

Here are only some (the list is quite lengthy) of Morris's list of established professionals that are critical of MI: Nathan Brody (1992. Intelligence. 2nd ed. New York: Academic Press.); Thomas J. Bouchard Jr. (July 20, 1984. Review of Frames of Mind: The theory of multiple intelligence. *American Journal of Orthopsychiatry*, 54, 506-508); John B. Caroll (1993. *Human*

cognitive abilities: A survey of factor-analytic studies. New York: Cambridge University Press.); N.W. Eysenck (1994. Intelligence. In M.W. Eysenck, ed., *The Blackwell dictionary of cognitive psychology*, p. 1992-193); Jerry Fodor (1983. *The modularity of mind: An essay of faculty psychology*. Cambridge, Massachusetts: MIT/Bradford Press.); Perry D. Klein (1997, Autumn. Multiplying the problems of intelligence by eight: A critique of Gardner's theory. *Canadian Journal of Education*, 22(4), 377-394.

Criticism of MI in Educational Practice

Gardner and other researchers say that it is not necessary to have empirical confirmation of the MI theory as long as its implication can show good results in the classroom. The problem is "Gardner has never laid down a detailed plan for applying his theory in schools, and the consultants and publishers who offer training in MI operate independently of him." (Collins, 1998)

Gardner's lack of application has led to, Gardner himself, criticizing how his MI theory is being applied in the classroom, while at the same time supporting these independent educationalists pushing MI in classroom pedagogy. Willingham (2004) discusses how Gardner wrote the preface to Thomas Armstrong's book, *Multiple Intelligences in the Classroom*, "which includes such trivial ideas, such as singing spelling and

spelling with leaves and twigs... [but] Gardner said that Armstrong provides 'a reliable and readable account of my work.'" But, Gardner has also "expressed concern that some educators have shallow understanding of what it takes to really engage intelligence. Gardner writes, "It well may be easier to remember a list if one sings it (or dances to it). However, these uses of the 'materials' of an intelligence are essentially trivial." (Willingham, 2004) Gardner's contradictions are hard to understand.

Another point of Willingham's (2004) is that Gardner also discusses the fact that intelligences are not interchangeable, Willingham sums up Gardner's view, "the individual low in logic-mathematical intelligence but high in musical intelligence cannot somehow substitute the latter for the former and understand math through music...but the musically minded student must eventually use the appropriate representation to understand math."

Collins (1998) outlines an example of a fifth-grade project about European settlement of the Americas that fits what Gardner envisions. A particular student had "trouble getting things down on paper...his main emphasis is doing things with his hands [Body-Kinesthetic Intelligence]." The student's teacher said, "His model of the boat was fantastic. It showed he really knew

the information." Collins points out that "Gardner has claimed that 'all the intelligences have equal claim to priority.'" Therefore, this example used the student's understanding of the world in a kinesthetic way and was a valid form of assessment according to MI.

Collins then asks the question, "Can a kinesthetic approach help him understand central historical issues, like the reasons the Europeans came to America in the first place?" According to Gardner, the answer would be no; intelligences are not interchangeable as previously noted. Collins further points out that all "intelligences" are not equal, and that "historically, verbal and math skills may be stronger predictors of job performance...and employers seem to be placing a higher and higher premium on them."

Stahl (1999), a prominent reading researcher, discusses the fact that finding out what student's learning styles are or which "intelligences" they have and then matching instructional methods to them, has absolutely no effect on their learning. Willingham (2005) reiterates this point, of no connection or effect, with his review of research concerning the Modality Theory or the effect of matching modality of instruction with student's modality preference.

Baroness Greenfield, the director of the Royal Institute and professor of pharmacology at Oxford University states that "the method of classifying pupils on the basis of 'learning styles' is a waste of valuable time and resources." (as cited in Henry, 2007) Frank Coffield, a professor at London University's institute of education, who reviewed 13 models of learning styles, "insists that the approach is theoretically incoherent and confused." (as cited in Henry, 2007)

McEwan-Adkins (2008) stresses that "categorizing children and then prescribe something for them based on this categorization is very dangerous, especially when a child is a low-performing child." McEwan-Adkins goes on to ask the big question if one adopts the MI theory, "Do you play to the child's strengths or to a child's weaknesses?"

McEwan-Adkins then quotes psychologist George Miller who summarizes the scientific consensus:

> Since none of the work has been done that would have to be done before a single-value assessment of intelligence could be replaced by a seven-value assessment, the discussion is all hunch and opinion. It is true that, if such profiles were available, an educator might be better able to match the materials and modes of instruction to an individual student. But

> since nobody knows whether the educator should play to the student's strengths or bolster the students weaknesses (or both), the new psychometrics does not seem to advance practical matters much beyond present psychometrics.

Traub (1999), of the Thomas B. Fordham Foundation, wrote a book called, *Better by Design? A Consumer's Guide to Schoolwide Reform*. In his book, Traub gives a guide to ten of the best known school designs being implemented in the United States today. One of the ten reform designs reviewed was the MI theory.

Traub's main criticism is that Gardner, in his defense of MI, has become a "prominent spokesman for progressive education generally...and he favors a highly individualized "child-centered" pedagogy." (p. 57) Traub then points out that Gardner has become a moral philosopher and "wants to change the way we measure human worth... [and are] moving into a world where a different, and broader, set of human attributes will be prized." (p. 57)

Traub, in a statement by the National Center for Policy Analysis (2001) further discusses Gardner as a moral philosopher and reformer, "MI legitimizes the fad for 'self-esteem,' the unwillingness to make even elementary distinctions of value..." McNerney (1999) reiterates Traub's notions of Gardner in his

critic. McNerney states that MI creates a desired result for all stakeholders, namely that every student or parent's child is intelligent. McNerney states, "Parents, teachers, and students are all presented with a win-win situation. Self-esteem is guaranteed."

McNerney then goes on to say, "the quest for additional intelligences has just begun, limited by the imagination and spurred by the catalyst of egalitarian impulses. Let's hope the business community can find the openings to accommodate the growing number of talents that are being discovered and honed in today's classrooms."

Discussion and Conclusion

As noted, empirical research of MI is lacking and Gardner's own contradictions are glaring. So it could be asked, why is MI so widely accepted within the field of education, when all the doubt is evident and the theorist himself has never given clear tested application of its use in the classroom setting? This author would argue that if the theory of MI did not fit progressive, "child-centered" pedagogy and theory, the education field would be saying, "Gardner who? Multiple Intelligences what?" Out of all the readings of Gardner and of Gardner's supporters, it can be said that he does not supported traditional teacher-centered pedagogy or theory.

Further antidotal evidence of Gardner's progressive take on educational pedagogy is the redefining of a commonly used word to confuse its known meaning to further one's moral worldview (common in the political and social realm). An example of this is in such a term as "illegal alien" which is now "undocumented worker." This is exactly what Gardner has done with "intelligence."

The notion that every child, or every human for that matter, all have intelligence regardless what it is, that its all equal, is exactly egalitarianism in the purest form. Supporters of democracy support a legal egalitarianism (everyone treated equally under the law), but what MI does is push socialist even communist/Marxist egalitarianism that everyone is equal, because all intelligences are equal.

Therefore, if scientist's or doctor's intelligence is no better than a cashier's at McDonald's, then why should there be disparity in material wealth? And down the road we go. Kozoloff (2003) and Hirsch (2001) give excellent insight into educational progressivism's philosophical roots and cite that just as research and data does not support Gardner's MI theory, either does research or data support constructivism, progressivism, or romantic modernism in education.

Let's hypothetically say Gardner's MI theory is correct. What are the possible risks of MI integration in the classroom? On a large scale one could argue that if MI is indeed fact, with children having different but equal intelligences, then it would make sense to construct different schools for each of the different intelligences. Every child, on a given block, would need to be transported to various schools to match their intelligence. Then that leads to McEwan-Adkins's (2008) big question: "Do you play to the child's strengths or to a child's weaknesses?" Or do you send a student to a school to work on their weaknesses or do you send a student to a school to learn through their strengths or both? Would this placement be based on research or the data? If the decision had to be made today, if most definitely wouldn't, because there isn't any research or data to justify such action.

The lack of research and data leads to the next point of the possible risks of MI's implementation in the classroom. How are the intelligences or learning styles going to be objectivity or quantitatively assessed? Let us say that one was developed (this is hypothetical because one has not been developed to date), how would the data be formed into effective pedagogy and how would that pedagogy and the teacher's assessment of what is learned have any concrete usable connection or comparison? How

do we know the student with naturalist intelligence learned what they were suppose to compared to the student with interpersonal intelligence, and to what degree? The government has a vested interest to know, as do most parents.

With the realization that separate schools for different intelligences are most likely out of the question, classrooms with students with various intelligences will still be the norm. In regards to pedagogy for these mixed-intelligence classrooms, another risk of MI's implementation is that a teacher will be attempting to provide several different types of entry points into a lesson to play to each student's intelligence or learning style, which would lead to wasted class time.

Lastly, another risk of MI implementation in the classroom is again related to pedagogy and instruction time. As discussed before, Gardner has never supported traditional teacher-centered instruction, but has always discussed the constructivist child-centered approach in an application of MI.

As a history teacher at the high school level, a typical lecture would consist of a PowerPoint, which would have an opening activity, reflecting on previously learned information and taping on prior knowledge of what will be discussed. This opening activity would include writing or verbal discussion. Then the note taking format would be presented, most often with

a graphic organizer and key terms. The lecture itself would consist of realia (video clips, period photos, paintings, graphs, maps, etc.) along with outlined text. After key concepts are taught throughout the lecture, “check for understanding” questions would be posted, to which student’s would be called upon to answer verbally and/or in writing. If student’s are having trouble grasping the concept, this is the time re-teaching would occur. At the end of the lecture, review question or a short quiz would be given.

This actual example of a traditional direct instruction or teacher-centered lesson, no doubt, would teach a concept faster and with more effectiveness, in the same amount of classroom time as a constructivist student-centered project applied to just one type of intelligence or learning style.

Regarding teacher-centered instruction, the question could be asked, “Why is there hardly any discussion on a teacher-centered application of the MI theory?” The answer probably lies in the fact the progressive constructivists are using MI an attempt to prove their ideology as valid, because of the MI theory’s fit within their pedagogy and philosophy. This is really an excellent example of the theory leading the research, rather than the research leading the theory.

Considering what the critical psychological and educational field is saying, based on longitudinal, empirical, and traditional research, one would come to the conclusion that the education field just might be better off if we called Gardner's MI theory, multiple talents. The field of education needs to implement pedagogy based on research and data, and not implement untested theories, because of its fit into one's romantic philosophy. As Willingham (2004) concluded in this research on MI, "All in all, educators would likely do well to turn their time and attention elsewhere."

[An excellent additional source of these points on the MI theory and other educational issues brought about by progressive educational practices can be found on a website designed by parents, educators, and school board members from a suburb of Chicago called www.illinoisloop.org]

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