



## *Varying Pedagogy to Address Student Multiple Intelligences*

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**Abstract:** The Multiple Intelligences Theory, first addressed by Dr. Howard Gardner, is based on the theory that people learn utilizing different types of intelligences. For decades, the traditional way of thinking about higher education was large, impersonal, lecture hall style presentations followed thereafter by an exam of some sort. It was hypothesized that most students do not work from an intelligence that is most receptive to lecture, the means by which many college courses are delivered. The goal of this inquiry was to determine if the teaching methodologies most often used by the participant instructors were aligned with the intelligence strength from which their students worked. As educators develop and utilize pedagogies that consciously attempt to engage students in a variety of ways, knowing which intelligences students possess is critical to effective instruction. The benefit of this evaluation is two-fold. If instructors know the strengths of their students, they can better prepare engaging and relevant lessons that correlate with those strengths. Secondly, students, knowing their strengths, can engage various strategies to enhance their learning accordingly. The results of this survey demonstrated that the three strengths from which most students surveyed work from are social/interpersonal, self/intrapersonal and body movement/kinesthetic. Lecture is categorized with the linguistic/verbal intelligence and the survey showed that to be near the bottom for the students surveyed. Students also felt that the survey was accurate and helpful in allowing them to alter their study strategies to improve their learning.

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## I. INTRODUCTION

Multiple Intelligences was first addressed by Howard Gardner, the John H. and Elisabeth A. Hobbs Professor of Cognition and Education at the Harvard Graduate School of Education. Dr. Gardner is best known for his Theory of Multiple Intelligences which is a repudiation of the belief that there is a single human intelligence that can be assessed by standard psychometric instruments. As Dr. Gardner noted in his introduction to the tenth anniversary edition his classic work *Frames of Mind, The Theory of Multiple Intelligences*:

In the heyday of the psychometric and behaviorist eras, it was generally believed that intelligence was a single entity that was inherited; and that human beings—initially a blank slate—could be trained to learn anything, provided that it was presented in an appropriate way. Nowadays an increasing number of researchers believe precisely the opposite; that there exists a multitude of intelligences, quite independent of each other; that each intelligence has its own strengths and constraints; that the mind is far from unencumbered at birth; and that it is unexpectedly difficult to teach things that go against early ‘naive’ theories that challenge the natural lines of force within an intelligence and its matching domains. (Gardner 1993)

The eight intelligences are:

- spatial: very visual learners;
- verbal/linguistic/language: uses words and language very well; logical/mathematical: ability to use reason, logic and numbers;
- body movement/kinesthetic: ability to

control body movements and handle objects skillfully;

- nature: enjoy interacting with the outside world;
- musical rhythmic: produce and appreciate music;
- social/Interpersonal: relates and understands others;
- self/intrapersonal: awareness of one’s own inner state and an ability to self reflect.

For decades, the traditional way of thinking about college was the suit and tie wearing professor strolling in, setting down his worn leather satchel, and retrieving notes to be placed on the lectern. He would settle in to a long winded monologue about a certain topic and students would write down the pertinent pieces of information. A week or so later, there would be a written exam. Certainly, times have changed and instructors consciously attempt to engage students in a variety of manners. There are whole group discussions, engaging and lively activities, field trips, music, presentations, grading rubrics, drama, wet labs and a whole host of other intriguing activities. Each of these is aimed at reaching all students at some point during the lesson. These tools and techniques have become more popular in recent years and much of the popularity is due to Gardner’s research on multiple intelligences.

However, in higher education, in many cases, there is still a great reliance on lecture and notes or the linguistic/verbal intelligence. Pedagogies vary from instructor to instructor but, if one surveyed colleagues, it is likely that a high percentage would say they rely heavily on lecture and notes followed by some sort of paper exam. According to Gardner’s theories, linguistic/verbal intelligence is one strength that a student may possess. An entire classroom of students could represent each of the eight intelligences! Knowing which intelligences students possess is critical to appropriate

instruction. The benefit of this evaluation is two-fold. If instructors know the strengths of their students, they can better prepare engaging and relevant lessons that correlate with those strengths. Secondly, students, knowing their strengths, can engage various strategies to enhance their learning according to their strengths.

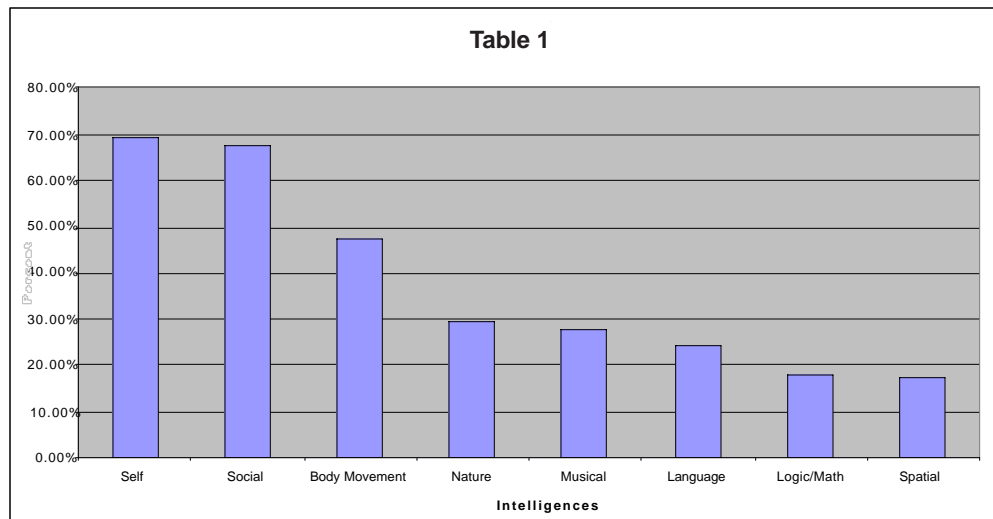
**II. METHODOLOGY/RESULTS**

Seminar members asked students in their classes to complete an online Multiple Intelligences Assessment (<http://literacy-works.org/mi/assessment>). A total of 167 students from different disciplines completed the assessment. Those disciplines included: Biology, Anatomy and Physiology I, English Composition, Math courses, and Computer Technology courses. The Massachusetts Community College Office of Institu-

tional Research compiled the data into a comprehensive report that includes a copy of the survey instrument and a comprehensive analysis of the data.

The assessment results in a print out of the students top three strengths. The students are also given an explanation of their strengths and possible study tools and techniques that they may benefit from. Table 1 displays each of the eight intelligences separately and provides the number of students who had each type of intelligence listed as one of their top three. The intelligences listed most often were self and social, both in the high 60 percents, followed by body movement at 47.2%. Nature, musical, and language followed all with percents in the 20s. The lowest two intelligences listed were logic/mathematical and spatial, both at 17+%.

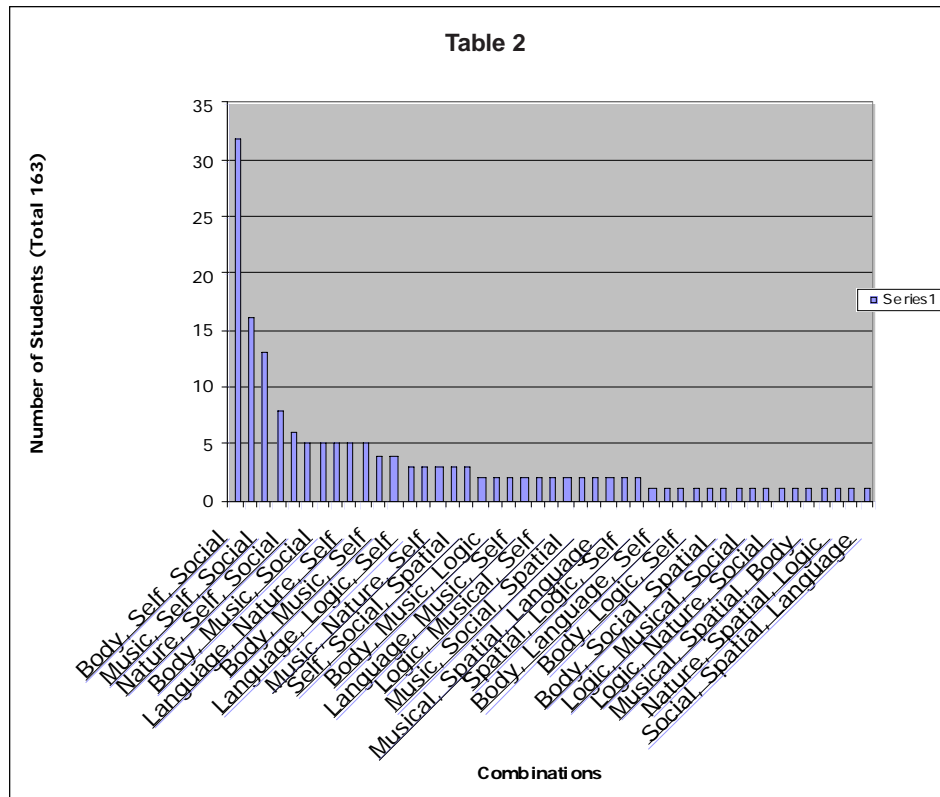
Table 2 lists combinations of students'



top three intelligences in descending order of frequency. The top three combinations all include both self and social, along with one other intelligence each: body, language, or music. At the other end of the list are eighteen combinations that are listed only once each. It is interesting to note that the lowest individual intelligences, logic and

spatial, appear reasonably often in the lowest eighteen combinations of three top intelligences, a total of nine times each.

In addition to the survey, the students were asked to comment on their assessment. They were to correlate the results from their assessment to their self identified strengths. Table 3 indicates that most



students (80.2%) agreed that assessment accurately identified their strengths; while very few (4.8%) did not.

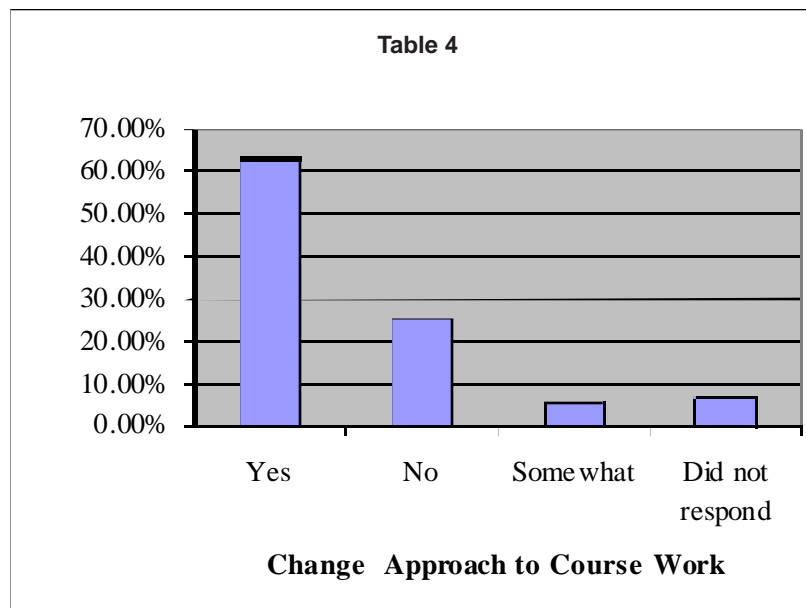
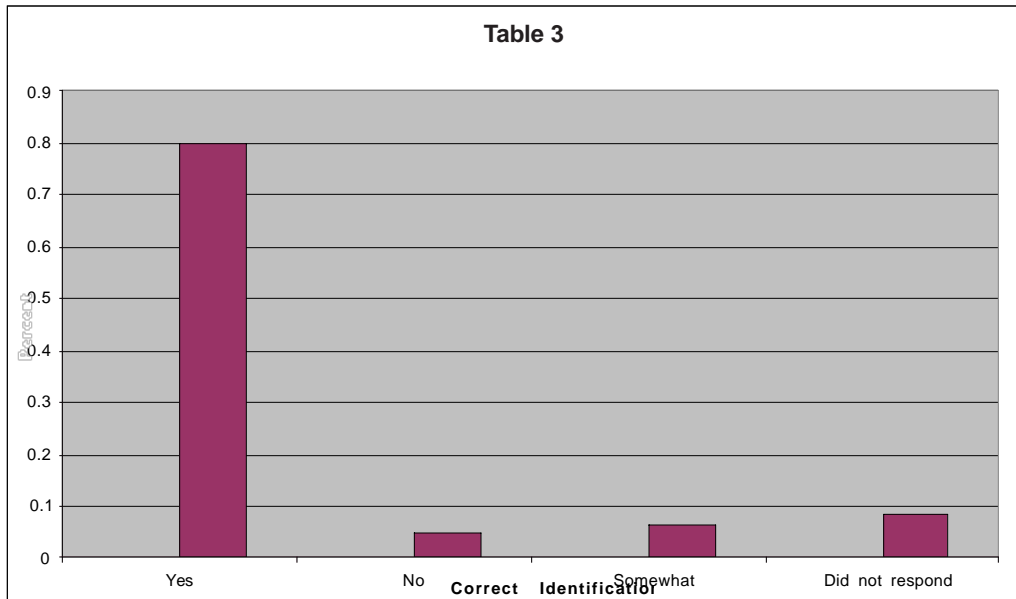
Finally, students were asked whether or not their individual results would encourage them to change their study habits. As indicated in Table 4, a majority of the students said that understanding their strengths would change their approach to their course work. However, a significant number (25%) said it would not.

### III. DISCUSSION

The results from this study were interesting. From the beginning, it was agreed that various students may respond better to certain pedagogies than others. However, the results were a bit more dramatic than anticipated. It is remarkable to note that

only roughly 23% of responders had verbal/linguistic as one of their top three strengths. It had been thought that since these were students in higher education, verbal/linguistic skills would be one of their top strengths. Body movement was the third highest percentage at 47% of students. This means that roughly half of the students in a classroom would learn best with some sort of physical manipulation of themselves and/or their environment. These results seem to be in contrast with the predominance of lecture style courses that we see quite often in higher education. Knowing that 60%-70% of students had self and social as one of their top three strengths should encourage instructors to involve classroom techniques that play to these intelligences.

The open response questions found that a high percentage of students felt that



the assessment was a useful tool. The results matched with what the students intuitively knew about themselves. The students' assessment of the accuracy of the survey tool was high at 80%. Most responded positively to it and 62% said that

they would change or alter their study methods to better fit with their learning styles.

There are two major conclusions to this study. First, the study showed that students in each class exhibit certain strengths that

do not align predominantly with lecture and notes method of instruction. This report should encourage instructors to change how they teach accordingly. Secondly, roughly 63% of the students felt as though they would change their approach to their studies knowing their strengths. They now have tools and techniques that will help them succeed in furthering their education. The students gained insight into their educational process and instructors gained insight into the strengths of the students sitting in their classroom. Many instructors have begun giving this assessment to their classes at the beginning of each semester to better plan their course. Now that there are tools available to help instructors better understand students' strengths, it is up to the instructor to rise to meet them. It is a challenging responsibility!

#### IV. RECOMMENDED FURTHER STUDY

This research study provided valid conclusions and should influence instructors to be more mindful of multiple intelligences in preparing their lessons. However, there are a few recommendations that may advance this research and provide more broad and conclusive evidence. This study focused on a sample of roughly 160 Massasoit Community College students. While these students were selected from a range of courses, a larger sample may be more defining. Sampling students from both 2 and 4 year institutions could also provide interesting insights. Finally, the survey instrument was chosen from a few on-line selections. Another survey instrument may further the research or take it in another direction. So, while this study was valid and conclusive, these recommendations for further study may provide stronger evidence or introduce new ideas and theories.

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