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Applied Strategies for Intelligence and Education

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Abstract

This paper explores applied teaching strategies based on research about intelligence and education. Different theories on intelligence will be compared to effective teaching strategies to support improved learning and education. Contrasting views on the theories will be presented to show a critical review of the subject.

## Background

The context of studying human intellect ranges from the foundational ideas of philosophers and scholars to contemporary studies which explore different types of intelligence that may be possessed or cultivated. Intellectual study advanced from individuals with diverse fields of study to a shared psychological discourse through the formation of great schools (Time Period Index, 2009). Technology supported the advancement of standardized tests conducted by Yerkes' (as cited in Gould, 1982) for statistical analysis on data collected from United States Army soldiers for Alpha and Beta testing in World War I. Alpha tests consisted of written content and were given to literate soldiers, while Beta tests consisted of pictures for the less literate. The data analysis was used to determine officer candidates. This applied use in the army led to commercial use by companies and it added credibility to the evaluation of the intellect. Criticism of the standardized tests has application to today. The potential for racial clustering due to test content compared to social backgrounds of different groups of people can be demonstrated by the data. The idea of searching out ideas beyond standardized tests is one that will be explored in the application of the study of multiple intelligences.

## Intelligence theories

Understanding intelligence theories provides a learner focused approach to improve teaching effectiveness. The categorization and recognition of different kinds of intelligence provides a way to embrace and evaluate learner strengths and preferences. Howard Gardner's (1983) breakthrough work titled *Frames of Mind: The theory of multiple intelligences* questioned the view of the mind as one entity and explored the idea of the mind being composed of many interrelated intelligences (as cited in Smith, 2008). The idea of multiple intelligences was

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approached from the perspective of intelligence being used to solve problems. The intelligences were organized into three main areas: (a) traditional intelligences included linguistic and logical-mathematical; (b) arts intelligences included musical, bodily-kinesthetic, and spatial; and (c) personal intelligences included interpersonal and intrapersonal. Educators found that the theories have a connection to the experience they have with students in the classroom. The intelligences have provided a common ground to discuss approaches to learning between teacher and student.

In addition to Gardner's work on multiple intelligences, additional research on types of intelligence have been explored. Emotional intelligence experiments conducted with marshmallows and four-year-olds demonstrated a high correlation between delayed gratification and later demonstrations of confidence, dependability and scholarly performance by the same children in high school (Gibbs, 1995).

#### Contrasting views

Critics of intelligence theories cite the difficulty in measuring the data. For example, Gardner and Hatch evaluated the artistic intelligence of students and found that previous experience and talents affected some of the student performance (1990). The lack of a single test methodology to evaluate multiple intelligences created a barrier for determining the real impacts of scientific use. Gardner noted that intelligences are interrelated rather than independent which also makes it hard to isolate individual attributes and impacts (Smith, 2008).

Potential for labeling and discrimination are concerns for evaluating intelligence. Lacayo's report *For Whom The Bell Curves* showed how the correlation between economic status and IQ can be a challenge when heredity and environment influence outcome (2001). An example cited by Lacayo included lower IQs of inner-city children with factors such as a

mother's nutrition, drug abuse and the early childhood development and exposure to reading and numbers by age nine to influence the future intellect. Refuting the assertion of heredity as a singular influence of IQ is the point by Labor Secretary Robert Reich regarding experiments which indicated that education and training have an influence on future earning.

#### Application to teaching and education

Searching out different intelligences or characteristics has application in training and education. Metropolitan Life searched out a way to reduce sales team training expenses through discovering optimism as a potential indication of future sales success (Gibbs, 1995). Candidates that failed the existing entry exam but demonstrated high characteristics of optimism were given an opportunity to perform, and they ended up outselling those candidates that previously passed the exam and were identified as high potentials (Gibbs, 1995).

Mindy L. Kornhaber pointed out that, educators embrace multiple intelligences as a framework to relate to their students (as cited in Smith, 2008). The framework of exploring class material through the perspective of multiple intelligences invites an increase in the number of ways to explore the subject matter with students and is therefore more focused on the depth and the quality of the learning experience rather than the breadth of subjects. Robert J. Sternberg in his exploration of a threefold approach for intelligence testing pointed out that measuring differences in acquisition of knowledge rather than just knowledge is a way to evaluate enriched learning (1984). Sternberg contrasted the perceptions that smart people were fast thinking and gave quick answers with math and logic testing that showed persistence and time spent on problems generated higher accuracy. In a reading comprehension example, reading speeds were tested and showed that the students that scored higher spent more time reading passages that

were more likely to be tested. The intelligent allocation of time is the life skill needed beyond the short time allocated for IQ testing.

### Conclusion

Expanding the concept of one intellect to the prospect of multiple intelligences has opened up new ways for teachers and students to address learning. The challenge for teachers is on the way that intelligence is evaluated. A standardized test is just one form of measurement. Using more than one type of measurement increases the potential for demonstrating interrelated intelligences to explore subjects in more depth. Just as technology opened up the statistical evaluation of data leading to new understanding of intelligence, technology today can be applied to add variety to the teaching and learning options. Closing the gap on the time required to allow for multiple learning options will open the door to embracing multiple intelligences among students for enriched learning experiences.

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