AN INVESTIGATION OF THE APPLICATION OF THE MULTIPLE INTELLIGENCES THEORY INTO THE SCHOOL LIBRARY MEDIA CENTER

by

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ABSTRACT

The purpose of this research project was to investigate applications of the multiple intelligences theory and its use in a school library media center.

The literature reviewed included writings on the theory of multiple intelligences, the educational applications of the theory, examples of these applications from multiple intelligence schools, and the latest vision and goals of school library media centers as described in Information Power: Building Partnerships for Learning (American Association of School Librarians [AASL] & Association for Educational Communications and Technology [AECT], 1998)

The researcher selected the descriptive design method of research. This method was selected because “. . . the researcher does not manipulate variables or control the environment in which the study takes place” (Merriam, 1995, p. 61). Its purpose is to systematically describe the facts and characteristics of the multiple intelligence theory as applied to school library media centers.

The collected data indicates that school library media centers are as varied as the schools they serve. Library media specialists reported that their library/media centers were small facilities, sometimes converted classrooms. Many of the categories listed on the survey were located in the classrooms, not the library/media center. The use of computers and a variety of software was common among many school library media centers.
Library media centers have been in a paradigm shift since the 1960s, moving away from being just the depository of books, to being an integrated, technology-rich program, which is student centered aimed at developing a community of learners. It seems that indeed change is very slow in coming to the library/media center. Whether it is reluctance to change by the library media specialist, or lack of support for change by the rest of the school, for some this lack of progress or slow progress is most frustrating.

Because the multiple intelligences theory is not a prescribed program, but a "philosophy of education, an attitude toward learning...rather than a set program of fixed techniques and strategies" (Armstrong, 1994, p. x), any varying of room arrangement and or activities can enhance one or several of the different intelligences.
DEDICATION

To my family,
for their patience and understanding.

To my husband, Elliot,
for without your help this would not have been possible.
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CHAPTER 1
THE PROBLEM

Introduction

In the early part of the 1900s, French psychologist Alfred Binet and a group of colleagues were asked to come up with a way to determine the risk for academic failure in primary school age students. Their efforts led to the intelligence quotient test (IQ test), which was widely celebrated. Finally, people felt here was a means to predict students’ success in school and in jobs or professions. The use of the IQ testing in the United States was gradual. Then, during World War I, the IQ test was used to place over one million American recruits into military occupations (Gardner, 1993).

Eighty years later, Howard Gardner, a cognitive scientist, presented his multiple intelligences theory in his book *Frames of Mind* (1983). Gardner (1993) saw intelligence as “a pluralist view of mind, recognizing that people have many different and discrete facets of cognition, acknowledging different cognitive strengths and contrasting styles” (p.6). Armstrong (1994) was one of the first educators to write on the multiple intelligence theory in relation to classroom application.

Gardner sought to broaden the scope of human potential beyond the confines of the IQ score. He seriously questioned the validity of determining an individual’s intelligence through the practice of taking a person out of his natural learning environment and asking him to do isolated tasks he’d never done before--and probably would never choose to do again. Instead Gardner suggested that intelligence has
more to do with the capacity for (1) solving problems and (2) fashioning products in a context-rich and naturalistic setting. (Armstrong, 1994, pp. 1-2)

Armstrong (1994) reports on the overall significance and wide acceptance of the multiple intelligence theory by giving a list of organizations, foundations, associations, and media groups which have embraced Gardner’s work. Armstrong (1994) comments also on the wide acceptance by the educational community in that “around the country, schools began to incorporate multiple intelligences into their classroom” (p. ix). Not being a step-by-step prescribed program, the multiple intelligences theory is “more accurately described as a philosophy of education” (Armstrong, 1994, p. x), which can be implemented into a variety of educational settings. This philosophy readily leads to individual-centered schools, ones geared to optimal understanding and development of each student’s cognitive profile (Gardner, 1993).

Development of the Problem

The book, Information Power: Building Partnerships for Learning (AASL & AECT, 1998), the most authoritative resource for school library media specialists, states that school library media centers are no longer merely rooms with books but have become an active, technology-rich learning environment with the goal of being centered on the individual student (AASL & AECT, 1998). These goals are compatible with the theory of multiple intelligences as described by Howard Gardner in that they describe a program that is student-centered, individualized, and encourages optimal learning.
Much has been written by multiple intelligence supporters such as Thomas Armstrong (1994) and Thomas Hoerr (1996, 1997) concerning the multiple intelligences theory and its classroom applications. However, minimal material is available on the specific correlation between school library media centers and the multiple intelligences theory. Barron (1996) identified only one position paper where the school library media specialist was even mentioned in relation to the seven intelligences.

Need for the Study

Much information is available on applying the multiple intelligences theory in the classroom. However, as revealed by Barron (1996), little, if any, information is available to the school library media specialist who wishes to implement the multiple intelligences theory into the day-to-day operation of the school library media center. This study documents, in practical terms, what is already being carried out by school library media specialists who are part of a school whose philosophy is based on the multiple intelligences theory and document ways to transfer suggested classroom strategies into the school library media center.

The researcher, a library media specialist, desires to implement the multiple intelligences theory into the researcher's school library media center. Although the school is not considered a multiple intelligences school, it is felt that providing for the various intelligences will greatly enrich the use and benefits of the facility.
Purpose of the Study

The purpose of this research project was to investigate applications of the multiple intelligences theory and its use in a school library media center.

Research Question

How can Howard Gardner’s theory on Multiple Intelligences be incorporated into a school library media center?

Definition of Terms

**Bodily-Kinesthetic Intelligence**: expertise in using one’s whole body to express ideas and feelings and facility in using one’s hands to produce or transform things (Armstrong, 1994).

**Core operations**: a term used by Gardner to describe “… one or more basic information-processing operations or mechanisms, which can deal with specific kinds of input” (Gardner, 1983, p. 64).

**Interpersonal Intelligence**: the ability to perceive and make distinctions in the moods, intentions, motivations, and feelings of other people (Armstrong, 1994).

**Intrapersonal Intelligence**: self-knowledge and the ability to act adaptively on the basis of that knowledge (Armstrong, 1994).

**Linguistic Intelligence**: the capacity to use words effectively whether orally or in writing (Armstrong, 1994).

**Logical-Mathematic**: the capacity to use numbers effectively and to reason well (Armstrong, 1994).

**Multiple Intelligences Theory**: “a pluralist view of mind, recognizing that people have many different and discrete facets of cognition,
acknowledging different cognitive strengths and contrasting styles” (Gardner, 1993, p. 6).

**Musical Intelligence:** the capacity to perceive, discriminate, transform, and express musical forms (Armstrong, 1994).

**Naturalist Intelligence:** was identified ten years after the initial seven. It is described as “the ability to recognize and classify plants, minerals, and animals, including rocks and grass and all variety of flora and fauna” (Checkley, 1997, p. 9).

**Savants:** “people who show superior abilities in one intelligence, while they function at a low level in their other intelligences” (Armstrong, 1994, p. 4).

**Spatial Intelligence:** the capacity to perceive the visual-spatial world accurately and to perform transformations upon those perceptions (Armstrong, 1994).
Children as early as infancy sing as well as babble. They emit unique individual sounds and produce patterns, even imitating patterns made by others with better than a random accuracy.

Gardner (1983) describes the individual with a strong musical intelligence as one having the ability to discern meaning and importance in sets of pitches rhythmically arranged and to arrange those pitch sequences as a means of communicating with other individuals.

The evolutionary origins of music are wrapped in mystery. Many scholars suspect that linguistic and musical expression and communication had common origins and, in fact, split off from one another several hundred thousand, or perhaps even a million, years ago. There is evidence of musical instruments dating back to the Stone Age and much presumptive evidence about the role of music in organizing work groups, hunting parties, and religious rites; but, in this area, theories are all too easy to fabricate and too difficult to discredit. (Gardner, 1983, p. 115)

Components of the musical intelligence consist of pitch (melody), rhythm (auditory frequency of a sound), and timbre (quality of a tone). Although the auditory sense is crucial to all musical participation, even individuals who are hearing impaired are able to access certain aspects of the musical experience.

One of the central puzzles surrounding music is its effect upon an individual's feelings. Anyone who has been intimately associated with music cannot deny its emotional implications. If music does not in itself convey emotions or affects, it captures the form of these feeling (Gardner, 1983).

Gardner presents two radically different approaches, both used by psychologists, to examine the mechanisms by which musical patterns are perceived. The most prevalent school of thought is the bottom-up approach
in which one group examines the ways in which individuals process the building blocks of music.

Single tones, elementary rhythmic patterns, and other units that allow ready presentation to experimental subjects and are devoid of the contextual information encountered in performances of works of music. Subjects are asked to indicate which of two tones is higher, whether two rhythmic patterns are the same, whether two tones are played by the same instrument. The precision with which these studies can be carried out makes them appealing to experimental investigators. Yet musicians have often questioned the relevance of findings obtained with such artificial patterns for the larger musical entities typically encountered by human beings. (Gardner, 1983, p. 106-107)

The opposing group, skeptical of the possibility of building up to music from its component parts, uses the top-down approach.

Where one presents to subjects musical pieces or, at least, healthy musical segments. In such studies, one typically examines reactions to more global properties of music (does it get faster or slower, louder or softer) and also to metaphoric characterizations of the music (is it heavy or light, triumphant or tragic, crowded or sparse?). What this approach gains in face validity, it typically sacrifices in terms of experimental control and susceptibility to analysis. (Gardner, 1983, p. 107)

Gardner (1983) notes in his concluding remarks on the musical intelligences the integral links between music and the other intelligences. He points out that from the earliest period of development the musical and linguistic intelligences proceed without relation to physical objects. Both rely on the oral-auditory system; though, as it turns out, they do so in neurologically distinct ways. The link between music and bodily or gesture language can best be described when music is thought of as an extended gesture, a kind of movement or direction that is carried out with the body.

The connection between music and spatial intelligence while less evident, can be seen best through composers who are dependent upon
spatial abilities, when they are required to posit, appreciate, and revise the complex architectonic of a composition. (Gardner, 1983, p. 123)

Feelings occupy a central role in the personal intelligences. Music serves as a way of capturing feelings and a vehicle to communicate them from the performer or the creator to the listener.

The final intelligence Gardner (1983) links to the musical is the logical-mathematical, pointing out that although music is clearly not high math, it does require some basic numerical competence in order to appreciate the operation of rhythms in musical work. Gardner (1983) states that the mathematician is interested in forms for their own sake, apart from any realization in a particular medium or from any particular communicative purpose. For the musician, on the other hand, patterned elements must appear in sounds and those elements are put together in certain ways for their expressive power and effects.

**Logical-Mathematical Intelligence.** The logical-mathematical intelligence does not have its origin in the auditory-oral sphere. Instead, this form of thought can be traced to an encounter with the world of objects. It presents action an individual can perform upon objects, "the relations that obtain among those actions, the statements (or propositions) that one can make about actual or potential actions, and the relationships among those statements" (Gardner, 1983, p. 128).

Another difference between the linguistic and musical intelligences, and logical-mathematical intelligence presents itself in the products fashioned by each intelligence. The products of the linguistic and musical intelligences are readily available to many, while most people can but admire from afar the ideas and works of mathematicians.
Gardner discusses several questions. First, what characterizes those with mathematical gifts?

The mathematician must be absolutely rigorous and perennially skeptical: no fact can be accepted unless it has been proved rigorously by steps that are derived from universally accepted first principles. Mathematics allows speculative freedom—one can create any kind of system that one wants; but in the end, every mathematical theory must be relevant to the physical reality, either in a straightforward manner or by relevance to the main body of mathematics, which in turn has direct physical implications. (Gardner, 1983, p. 138)

Other characteristics mentioned are the mathematician’s skill as a maker of patterns and their ability to handle long chains of reasoning.

A second question that Gardner presents is, what excites mathematicians? One obvious source of delight is in the solving of of a problem that has long been considered insoluble. Other delights include: the inventing of a new field of mathematics, discovering an element in the foundation of mathematics, finding links between different fields of mathematics, and the ability to not merely discover an analogy but to find an analogy between kinds of analogies.

Gardner (1983) describes the allegiance of mathematics and science.

The scientist needs mathematics because the body of brute fact is unwieldy: the orderly scheme of abstract relations which he can obtain from mathematics is a chief tool in making order out of this chaos. . . . For him, mathematics is a tool—albeit an indispensable one—for building models and theories that can be describes and, eventually, explain the operation of the world—be it the world of material objects (physics and chemistry), of living things (biology), of human beings (social or behavioral sciences), or of the human mind (cognitive science). (Gardner, 1983, p. 145)

Gardner states that he does not see the logical-mathematical intelligences as being more basic than the other intelligences. He indicates that at times United States’ society as well as other societies may think this
intelligence lies at the center of all human intelligences. While Gardner does not diminish the importance that logical-mathematical intelligence has played in the history of the West, he feels a more plausible way of looking at it is to consider "logical-mathematical skill as one among a set of intelligences--a skill powerfully equipped to handle certain kinds of problems, but one in no sense superior to, or in danger of overwhelming, the others" (Gardner, 1983, p. 167).

Spatial Intelligence. "Central to spatial [visual spatial] intelligence are the capacities to perceive the visual world accurately, to perform transformations and modifications upon one's initial perceptions, and to be able to re-create aspects of one's visual experience, even in the absence of relevant physical stimuli" (Gardner, 1983, p. 173). Gardner (1983) sees the spatial intelligence as a combination of abilities where an individuals with skills in the other intelligences are also likely to be successful in the spatial domain.

Just as the linguistic intelligences is not wholly dependent upon the auditory-oral channel and can be developed in individuals deprived of these modes of communication, so, too, spatial intelligence can be developed even in an individual who is blind and therefore has no direct access to the visual world.

The most basic operation of spatial intelligence is the ability to perceive a form or an object. When one manipulates a form or an object, appreciating how it will be apprehended from another viewing angle, or how it would look (or feel) were it turned around, an individual enters into the spatial realm, for manipulation through space has been required.
Some of the capacities related to spatial intelligence include:

the ability to recognize instances of the same element; the ability to transform or to recognize a transformation of one element into another; the capacity to conjure up mental imagery and then to transform that imagery; the capacity to produce a graphic likeness of spatial information; and the like . . . these operations are independent of one another and could develop or break down separately . . .” (Gardner, 1983, p. 176)

Spatial capacities are important for orienting oneself in various locales: recognizing objects and scenes, working with graphic depictions, symbols on maps, diagrams, or geometrical forms. Two other uses of spatial capacities are more abstract and elusive. “One involves sensitivity to the various lines of force that enter into a visual or spatial display . . . feelings of tension, balance, and composition that characterize a painting, a work of sculpture . . .” (Gardner, 1983, p. 176). The other abstract, or elusive use of spatial intelligence is the ability to discern similarities across two seemingly remote realms of experience.

A keenly honed spatial intelligence proves an invaluable asset in our society. In some pursuits, this intelligence is of the essence—for example, for a sculptor or a mathematical topologist. Without a developed spatial intelligence, progress in these domains is difficult to envisage: and there are many other pursuits where spatial intelligence alone might not suffice to produce competence, but where it provides much of the necessary intellectual impetus. (Gardner, 1983, p. 190)

**Bodily-Kinesthetic Intelligence.** The characteristics of this intelligence are exhibited by the capacity to work skillfully with objects, those activities that involve the fine motor movements of one’s fingers and hands, and those that involve the gross motor movements of the body. Gardner (1983) considers these two capacities the core of bodily intelligence. To illustrate these core components, he gives the example of dancers and swimmers as individual who have developed a keen mastery over the motion of their
bodies and individuals such as artisans, ballplayers, and instrumentalists who are able to manipulate objects.

A description of the use of the body as a form of intelligence "has been a radical disjunction in our recent culture tradition placing activities reasoning" (Gardner, 1983, p. 208) on one side and activities of the manifestly physical part of our nature, on the other side. He calls it the distinction between the reflective and the active. To support the notion of bodily movement as intelligence, Gardner (1983) notes that psychologist have recently expressed the link between use of the body and development of cognitive abilities.

When society thinks of this bodily intelligence, gross motor activities seem to be what is most often associated with the intelligence. However, this intelligence does encompass the fine motor skills, which gives one the ability to manipulate objects. Working with small physical objects constitutes a major part of occupational roles of a great many individuals. From Gardner’s point of view, the use of objects and tools in general and the devising of new inventions are best viewed through a blending of several intelligences. "In my own view, fine motor bodily intelligence, in combination with spatial capacities, is most strongly entailed in the use of objects and tools" (Gardner, 1983, p. 232).

The body is more than simply another machine indistinguishable from the artificial objects of the world. It is also the vessel of the individual’s sense of self, his most personal feelings and aspirations, as well as that entity to which others respond in a special way because of their uniquely human qualities. (Gardner, 1983, p. 236)

The Personal Intelligences. The foundation of the last two intelligences initially identified by Howard Gardner have their basis in two different historical and traditional movements. One movement dominated
by Sigmund Freud, a psychoanalysis, felt “the key to health was self-
knowledge and a willingness to confront the inevitable pains and paradoxes
of human existence” (Gardner, 1983, p. 238). The other movement,
influenced by William James, dean of American psychologists and
philosophers, at Cambridge, Massachusetts, “stressed the importance of
relationships with other individuals, as a means of gaining ends, of effecting
progress, and of knowing oneself” (Gardner, 1983, p. 238). What united Freud
and James, was the belief in the importance, the centrality, of the individual self.
What set them apart was in their orientation towards the personal
intelligence.

Freud was interested in the self as located in the individual and, as a
clinician, was occupied with an individual's own knowledge of
himself . . . In contrast, James’s interest, and, even more so, the interest
of the American social psychologists who succeeded him, fell much
more on the individual's relationship to the outside community.
(Gardner, 1983, p. 238-239)

Gardner recognizes both of these aspects of human nature as being
separate intelligences, the intrapersonal intelligence and the interpersonal
intelligence.

The intrapersonal intelligence, has as its core operation, the ability to
access one's own feelings. In its primitive form it

amounts to little more than the capacity to distinguish a feeling of
pleasure from one of pain and, on the basis of such discrimination, to
become more involved in or to withdraw from a situation. At its most
advanced level, intrapersonal knowledge allows one to detect and to
symbolize complex and highly differentiated sets of feelings. (Gardner,
1983, p. 239)

The interpersonal intelligence, on the other hand, is an individual's
ability to look beyond him or herself to others. The core operation is "the
ability to notice and make distinctions among other individuals and in
particular, among their moods, temperaments, motivations, and intentions" (Gardner, 1983, p. 239). In its most primitive form:

the interpersonal intelligence entails the capacity of the young child to discriminate among the individuals around him and to detect their various moods. In an advanced form, interpersonal intelligence permits a skilled adult to read the intentions and desires—even when these have been hidden—of many individuals and potentially, to act upon this knowledge—for example, by influencing a group of disparate individuals to behave along desired lines. (Gardner, 1983, p. 239)

In the interpersonal and intrapersonal intelligences, more so than in the other intelligences, there exist more variety among individuals, due to the difference in interpretation by each culture. Forms of spatial or bodily-kinesthetic intelligences are more obvious, readily identified, and comparable across the different cultures. Variations of personal intelligence are more distinctive, less comparable, and perhaps even unknown to someone from a different society.

**Naturalist Intelligence.** Ten years after Gardner (1983) presented the initial seven intelligences, he discovered another ability that could be considered an intelligence and described "the naturalist intelligence [as] the ability to recognize and classify plants, minerals, and animals, including rocks and grass and all variety of flora and fauna" (Checkley, 1997, p. 8-9).

Gardner cited several reasons the naturalist intelligence fulfilled his criteria to be included with the other intelligence. First, it is a human ability needed for survival; to be able to identify which animals to hunt for food, and which to avoid. Second, this ability is not restricted to humans but that other animals need the naturalist intelligence to survive as well. Third, and "the big selling point is that the brain evidence supports the existence of the naturalist intelligence. There are certain parts of the brain particularly
dedicated to the recognition and naming of what are called ‘natural’ things” (Checkley, 1997, p. 9).

Gardner used Charles Darwin as an example of a person who exhibits dominance in the naturalist intelligence. Darwin was not only able to identify and classify insects, birds, fish, and mammals, but “he saw deeply into the nature of living things” (Checkley, 1997, p. 9).

**Key Points in Multiple Intelligences Theory.** Armstrong (1994) indicates that there are four key points to remember about the multiple intelligence model: (1) Each person possesses all seven [eight] intelligences. Some people may appear to be stronger in one or several of the intelligences. Other people appear to lack all but the most rudimentary form of intelligence. Most, however, lie somewhere in between these two points with varying development of the different intelligences. (2) Most people can develop each intelligence to an adequate level of competency. Given the appropriate encouragement, enrichment, and instruction, virtually everyone has the capacity to develop all seven [eight] intelligences. (3) Intelligences usually work together in complex ways. Since no intelligence exist by itself, except perhaps in savants or brain-injured individuals, the intelligences are always interacting with each other. (4) There are many ways to be intelligent within each category. No set standard of abilities or attributes has been prescribed for each of the intelligences. The multiple intelligences theory recognizes the unique way in which people show their abilities within the intelligences (Armstrong, 1994).
Educational Implication of the Multiple Intelligences Theory

Thomas Armstrong, one of the first educators to write on the educational implications of the multiple intelligence theory, describes the theory as “a philosophy of education, an attitude toward learning, or even a meta-model of education in the spirit of John Dewey’s ideas on progressive education rather than a set program of fixed techniques and strategies” (Armstrong, 1994, p. x). Armstrong (1994) states that the “MI [multiple intelligences] theory makes its greatest contribution to education by suggesting that teachers need to expand their repertoire of techniques, tools, and strategies beyond the typical linguistic and logical ones predominantly used in American classrooms” (Armstrong, 1994, p. 48).

Gardner’s (1993) personal view of the educational implication for the multiple intelligence theory is that the theory makes it possible to identify an individual’s intellectual strengths at an early age, then build upon this knowledge to create the best educational opportunities and options for the child. He suggests the purpose of schools should be to develop intelligences and to help people reach their particular spectrum of intelligence...[which] leads to the notion of an individual-centered school, one geared to optimal understanding and development of each student’s cognitive profile. (Gardner, 1993, pp. 9-10)

For schools to educate in this manner, Gardner redefined the roles of educators to be: (1) assessment specialists, whose job it would be to assess the possible abilities and interests of the student, (2) student-curriculum broker, whose job would be to match the student’s profile with the best curricula, (3) school-community broker, who would coordinate learning opportunities in the community beyond the school, and (4) master teacher, whose role in
addition to teaching, would be to supervise new teachers and the whole student-assessment-curriculum-community equation.

Multiple Intelligence Schools

Since 1983 when Howard Gardner first presented the theory of multiple intelligences, a number of schools throughout the United States and Canada have come to embrace the theory. Schools have been redesigned (and sometimes the whole school district) to reflect the progressive educational philosophy that the theory represents. Several schools have come to be known as multiple intelligence schools.

New City School. The New City School in St. Louis, Missouri, began in the spring of 1988, having been inspired by Howard Gardner’s book, Frames of Mind (1983). A group of about a dozen teachers and administrators adopted the multiple intelligence theory as an educational philosophy with implications for how children can learn, and changed how teachers can teach. They redesigned their curriculum, how they communicate with parents, and how they assess students.

The multiple intelligence approach, which recognizes and respects different ways students learn, was adopted in the area of curriculum development giving students the “opportunity to use various intelligences to acquire knowledge and share what they have learned” (Hoerr, 1997a, p. 44). Students are expected to learn to read, write, and compute well. In addition students are provided with opportunities to use their other intelligences. Teachers planned their days, units, and themes incorporating the different intelligences into their lessons, with the understanding that it is unrealistic to expect each lesson to reflect every intelligence.
Student assessment in the multiple intelligence classroom calls for the teacher to vary assessment practices. In addition to the traditional paper and pencil test, student portfolios are extremely reflective in capturing a student’s performance. At New City School, the following may be found in a student’s portfolio: video tapings, audio tapings, autobiographical entries, at least one item reflecting student progress in each of the intelligences, standardized test scores, and of course, grades.

An area of focus dealt with the manner in which each student’s progress is reported to the parents. Believing that the personal intelligences are the most important, the first page of the report card is devoted to intrapersonal (self-assessment) and interpersonal (interaction with others) intelligences. Other pages of the report card address linguistic and logical-mathematic intelligence through a rubric-based format.

Opportunities for open communication begin before the school year, with a welcoming phone call to each family, followed by an Open House. In September, an Intake Conference is held for parents to share their thoughts about how they view their children, including which of the particular intelligences they see as their child’s strength.

Because the multiple intelligences school is still a fairly unique way of educating children, parent communication is extremely important. Not only do parents need to be educated about the multiple intelligence approach, they still need and expect traditional measures on their child’s achievement.

**Key Elementary School.** In 1984, eight teachers from the Indianapolis Public Schools contacted Howard Gardner for help in starting their own K-6 elementary school. They had been inspired after reading his book, *Frames of Mind* (1983), where Gardner first presented his theory on multiple
intelligences. When Key Elementary opened in 1987, it’s goal was to give equal emphasis to the seven areas of intelligences (Bolanos, 1994).

To achieve this goal, several practices were instituted at Key Elementary, which when combined, would create a total learning experience. The practices included: daily instruction in all seven intelligences, school wide themes, “apprenticeshiplike ‘pods’” (Gardner, 1993, 113), flow room, community resource committee, and heterogeneous mixed-aged grouping. Bolanos, principal of Key Elementary, stated that to support these practices, “consequently, the staff includes more specialists than normally is the case at the elementary level” (1994, p. 30). The 1994 staffing included, “seven classroom generalists, full-time specialists in the visual arts, instrumental music and physical education, a media specialist, a resource teacher, and two teachers on assignment -- the flow activity teacher and the community resource teacher” (Bolanos, 1994, p. 30).

Based upon the conviction, of the founding educators of Key Elementary, that each child should have his or her multiple intelligences stimulated each day, students received instruction in traditional subjects (math, science, language arts), and they also take classes “everyday in physical education, art, music, Spanish, and computers” (Armstrong, 1994, p. 111). Compared with other schools on a national level, Key Elementary students “receive four times the exposure to art, music, and physical education than does the average student in the United States” (Armstrong, 1994, p. 111).

To focus curricula activity, the school staff selects three school wide themes for each year. Students are required to carry out a project related to each theme. The project presentations are videotaped while being presented to the teacher and other students, and kept as part of each student’s video
portfolio. At the conclusion of the theme period projects are displayed so that other students have an opportunity to examine what others in the school have done (Gardner, 1993).

Each day students participate in a special learning groups, called “pods” (Armstrong, 1994, p. 112) that they have select based upon their interest. Students work with other students of varying ages, with a competent teacher in an apprentice-like context that emphasizes mastering real-world skills and knowledge (Armstrong, 1994). The pods allow students to work at their own pace in a variety of areas, from architecture to gardening. The pods also allow students the opportunity to observe an expert engaged in productive work (Gardner, 1993).

Several times a week students visit the flow room, which was named after Mihaly Csikszentmihalyi’s concept of flow, which he refers to as “a positive state of intense absorption in an activity” (Armstrong, 1994, p. 112). Students engage in activities designed to stimulate their intelligences in open-ended and playful ways. The flow room is stocked with board games, puzzles, computer software programs and other learning materials. Students may choose to participate, alone or in a group, with any activity available. “A teacher helps facilitate their experience and also observes how individual students interact with the material, which is keyed to a specific intelligence” (Armstrong, 1994, p. 112).

Complementing the pods are strong ties to the wider community. Once a week, an outside specialist visits the school and demonstrates an occupation or craft to all the students. (Gardner, 1993, p. 113)

The committee resource teacher, along with a group of community representatives (from businesses, the arts, cultural organizations, government, and higher education) put together weekly programs or
assemblies for the entire student population (Armstrong, 1994). "The hope is that students not only will learn about the range of activities that exist in the wider community but in some cases will have the opportunity to follow up on a given area, possibly under the guidance of the visiting mentor" (Gardner, 1993, p. 113).

Finally, a practice carried out at Key Elementary is the heterogeneous mixed-aged grouping. This practice is based upon the belief that a class with a wide range of ability levels greatly enriches a program through diversity (Armstrong, 1994).

In conclusion, the creation of Key Elementary "was not mandated at an administrative level; it is a product of the energy and commitment of eight public school teachers who had a dream about what education could be for their students" (Armstrong, 1994, p. 113).

**Project Spectrum.** Project Spectrum grew out of Gardner's own research team working with young children. Spectrum began as a collaborative assessment effort, carried out in conjunction with Gardner's colleagues David Feldman of Tufts University and Mara Krechevsky of Harvard Project Zero. At its inception in 1984, the principal goal was to ascertain whether preschoolers already exhibit distinctive profiles of intelligences. As the research progressed they discovered they were developing a general approach to early education. (Gardner 1991).

In the Spectrum classroom children are surrounded each day by rich and engaging materials that evoke the use of a range of intelligences. We do not attempt to stimulate intelligences directly using materials that are labeled "spatial" or "logical-mathematical." Rather, we employ material that embody valued societal roles or ends states, drawing on relevant combinations of intelligences. (Gardner, 1991, p. 206 and Gardner 1993, p. 90)
Learning centers were developed where children are able to either observe competent adults or older peers work and play, or even to have regular interaction with materials themselves. It is believed that children who are provided with opportunities to observe adults or peers, "come to appreciate the reason for the materials as well as the nature of the skills that equip a master to interact with them in a meaningful way" (Gardner, 1991, p. 206 and Gardner 1993, p. 90) Children who are in the program a year or more were allowed to spend ample time exploring all the various learning center areas.

At the end of the year, the information collected on each child by the researcher is put into a summary called the Spectrum Report. The report describes the child's personal profile of strengths and weakness and offers specific recommendations about what might be done at home, in school, or in the wider community (Gardner, 1991). In addition, a Parent Activities Manual is prepared with suggestions for activities in the different domains addressed by Spectrum (Gardner, 1993).

Project Spectrum stresses the notion that every child is unique: parents and teachers deserve to have a description faithful to the child, as well as suggestions for the kinds of experiences appropriate to the child's particular configuration of strengths and weakness. (Gardner, 1993, p. 93)

Over the years Project Spectrum has evolved from an assessment to an educational environment. In collaboration with classroom teachers, curricular materials in the form of theme-related kits have been developed. The materials are used in an exploratory fashion with the younger child, and in a more traditional ways with the older child, to promote preliteracy skills (Gardner, 1991).
"The adaptability of Spectrum has proved to be one of the most exciting features" (Gardner, 1991, p. 207). It has been adaptable to a range of ages from four to eight years. It has been used for diagnosis, classification, teaching, research, compensatory, and enrichment. And it has been used with average students, gifted students, handicapped students, and students at-risk.

Project Spectrum epitomizes the way in which the theory of multiple intelligences has been able to catalyze the creation of effective educational interventions. . . .but in no way has MI [multiple intelligences] theory dictated the exact contents or the precise steps in the implementation of Spectrum. . . .our program has itself altered considerably over the decade. . . .Add to that the very different uses made of Spectrum ideas by researchers and practitioners in different parts of the country, and one encounters a family, indeed "spectrum" of variations of Project Spectrum. (Gardner, 1993, p.110 - 111)

Multiple Intelligences and the School Library Media Center

The connection of the multiple intelligences theory to the school library media center, though not specifically documented, seems more than compatible based upon the philosophy and goals set forth in the latest edition of Information Power: Building Partnerships for Learning (AASL & AECT, 1998). This resource available to school library media specialists, states:

Information literacy--the ability to find and use information--is the keystone of lifelong learning. Creating a foundation for lifelong learning is at the heart of the school library media center program. Just as the school library media center has moved far beyond a room with books to become an active, technology-rich learning environment with an array of information resources, the school library media specialist today focuses on the process of learning rather than dissemination of information. (AASL & AECT, 1998, p. 1)

"Students actively seek to construct meaning from the sources they encounter to create products that shape and communicate the meaning
effectively" (AASL & AECT, 1998, p.2). This is precisely what Gardner (1983) suggests about intelligence. As, "the capacity for (1) solving problems and (2) fashioning products in a context-rich and naturalistic setting" (Armstrong, 1994, p. 2).

A second connection between Gardner's (1983) multiple intelligence theory and the school library media center was found in the vision of the school library media center as being one in which:

promoting authentic learning demands both an acceptance of current learning and information theory and a new conception of the context of education... Central to this new context is the idea of the "learning community"... Helping students flourish in this learning community is the central concern of student-centered library media programs. (AASL, 1998, p. 2)

Goals for today's library media program point to the development of a community of learners that are centered on the student and sustained by a creative, energetic library media program. These goals are:

1. To provide intellectual access to information through learning activities that are integrated into the curriculum.
2. To provide physical access to information:
   a. Resources that are carefully selected, and organized, with a diverse range of subject, level and format.
   b. Systematic procedure for locating information, inside and outside the library media center.
3. To provide learning experiences that encourage students.
4. To provide leadership, collaboration, and assistance to teachers.
5. To provide resources and activities that contribute to life long learning.
6. To provide programs that function as the information center of the school.
7. To provide resources and activities for learning that present a diversity of experiences, culture, and opinions. (AASL & AECT, 1998)

Barron (1996), the Coordinator of the School Library Media Program, College of Library and Information Science, the University of South Carolina, and regular contributor to the journal, School Library Media Activities
Monthly, in his column Keeping Current, focused his attention on Howard Gardner’s multiple intelligence theory, in his article, “Multiple Intelligences, Paradigms, and the School Library Media Specialist.” He stated:

Having now given Howard Gardner and the theory of multiple intelligence my full attention, I have found a fascinating and exciting approach to helping kids (and adults for that matter) learn better. It has also awakened me to the potential role of the school library media program and media specialist in schools that adopt this approach to educational reform. (Barron, 1996, p. 48)

Barron raised the question of where library media specialists come in to the implementing of programs based on the seven intelligences. At the time he wrote the column he had found only one position paper linking a library media specialist and the multiple intelligences.

AASL & AECT (1998) may interpret the school library media center to be a focus on the individual, to create authentic learning experiences which “demands both an acceptance of current learning and information theory and new conception of context education” (AASL & AECT, 1998, p. 2).

Summary

Literature on the multiple intelligences abounds, and indicates the theory can be applied in any educational setting that views each student as an individual learner. The theory itself, not a recipe for education, but rather a philosophy, an attitude toward learning that can be applied by any teacher who is willing to expand his or her repertoire of techniques and strategies to create authentic learning (Armstrong, 1994).

Connecting multiple intelligences theory to the school library media center appears to be more than compatible based upon the philosophy and goals set forth in the latest edition of Information Power: Building
Partnerships for Learning (AASL & AECT, 1998). Information Power asserts that "promoting authentic learning demands both an acceptance of current learning and information theory and a new conception of the context of education. . . . helping students flourish in this learning community is the central concern of student-centered library media program" (AASL & AECT, 1998, p. 2).
CHAPTER 2
THE LITERATURE REVIEW

Introduction

A review was conducted on the literature by Howard Gardner, and others who have embraced his notion of multiple intelligence. Using these resources, each intelligence is defined and the implication of multiple intelligences to educators by using successful Multiple Intelligence Schools as examples is discussed.

The literature reviewed included writings on the theory of multiple intelligences, the educational applications of the theory, examples of these applications from schools who call themselves multiple intelligence schools, and the latest vision and goals of the school library media center as recently described in Information Power: Building Partnerships for Learning (AASL & AECT, 1998).

Multiple Intelligences Theory:

Gardner (1993), described the birth of the intelligence quotient (IQ) test, with the unusual request presented to Alfred Binet and some of his colleagues in the early 1900s. Binet was asked to develop a measure that would predict which youngsters would succeed and which would fail in the primary grades of Paris schools. With that, the intelligence test was born and moved to prominence in the United States during World War I where it was used to test over one million recruits for military job placements.
Gardner was dissatisfied with the IQ test because he saw it as one-dimensional, and correspondent to the uniform schooling. Uniform schooling comes from an educational system based on national standards and efficient assessment in the form of multiple choice, number-two pencil exams. Only critical reading, calculations, and thinking skill are encouraged and strengthened by this system.

Gardner (1983) presented an alternative vision, a different view of the mind, one that yielded a very different view of school. It is pluralistic, recognizing many different and discrete facets of cognition, acknowledging that people have different cognitive strengths and contrasting cognitive styles. He saw each of these strengths as an intelligence and called his theory Multiple Intelligences.

In Gardner’s theory, the word intelligence is used in two senses. Intelligence can denote a species-specific characteristic; homo sapiens is that species which can exercise these eight intelligences. Intelligence can also denote an individual difference. While all humans possess the eight intelligences, each person has his/her own particular blend or amalgam of the intelligences. (Project SUMIT, 1999, p. 2)

In deciding what cognitive abilities could be considered intelligences, Gardner and his colleagues collected findings from evolutionary biology, anthropology, developmental and cognitive psychology, neuropsychology, and psychometrics to judge whether an ability could be counted as an intelligence. The following eight criteria were, and continue to be used, to evaluate an ability.

1. potential isolation by brain damage
2. existence of savants, prodigies, and other exceptional individuals
3. an identifiable core set of operations--basic kind of information-processing operations or mechanisms that deal with one specific kind of input
4. a distinctive developmental history, along with a definite set of
"end-state" performances
5. an evolutionary history and evolutionary plausibility
6. support from experimental and psychological tasks
7. support from psychometric findings
8. susceptibility to encoding from a symbol system (Project SUMIT, 1999, p. 1)

Gardner presented the initial list of seven intelligences in Frames of Mind (1983). He carefully delineated each of the seven intelligences, applying the eight criteria described in the previous paragraph. The following are descriptions by Gardner.

Linguistic Intelligence. "In the poet, then one sees at work with special clarity the core operations of language" (Gardner, 1983, p. 77). A poet is sensitive to: the meaning of words; the order among words, which is the capacity to follow rules of grammar; and, to the sound, rhythms, inflections, and meter of words.

But most of us are not poets--not even of amateur standing--and still we possess these sensitivities in significant degrees. . . . More, one could not hope to proceed with any efficacy in the world without considerable command of the linguistic tetrad of phonology, syntax, semantics, and pragmatics. Linguistic competence is, in fact, the intelligences--the intellectual competence--that seems most widely and most democratically shared across the human species. (Gardner, 1983, p. 77-78)

Gardner describes four major ways the average person uses language daily. First, the rhetorical aspect of language, which is the ability to use language to convince other individuals of a course of action, best exhibited in political leaders and legal experts, as well as in a toddler wanting a second helping of cake. Second is the mnemonic potential of language, which is the capacity to use language to help one remember information.

A third aspect of language is its role in explanation. Much of teaching and learning occurs through language. At one time, instruction was
primarily presented through oral means, employing verse, collections of adages, or simple explanations. Over the years, instruction, in its written form, has increased through the use of conveying basic concepts in textbooks.

The final use of language described by Gardner, is the potential of language to explain its own activities, "the ability to use language to reflect upon language, to engage in 'metalinguistic' analysis" (Gardner, 1983, p. 78).

Gardner described how, in most complex societies, language is seen as a tool, "a means for accomplishing one's business--rather than the central focus of attention" (1983, p. 96). To illustrate this, Gardner gave the example of scientists who rely heavily on language for communicating their findings to others through speeches or well-organized essays. The focus falls not on the language per se but rather on the communication of ideas. Scholars, such as historians or literary critics who seem more dependent upon language, not only as a source of what they study, but also as a means for conveying their conclusions, do not use language as the basis of the work being accomplished.

"While language can be conveyed through gesture, and through writing, it remains at its core a product of the vocal tract and a message to the human ear" (Gardner, 1983, p. 98). However, Gardner explained that he did not term this capacity as an auditory-oral form of intelligence for two reasons.

First of all, the fact that deaf individuals can acquire natural language--and can also devise or master gestural systems--serves as decisive proof that linguistic intelligence is not simply a form of auditory intelligences. Second, there is another form of intelligence, with a history of equal longevity, and an autonomy of equal persuasiveness, which is also tied to the auditory-oral tract. I refer, of course, to the musical intelligence . . . . (Gardner, 1983, p. 98)

Musical Intelligence. "Of all the gifts with which individuals may be endowed with, none emerges earlier than musical talents" (Gardner, 1983, p.
CHAPTER 3
METHODOLOGY

Purpose

The purpose of this research project was to investigate applications of the multiple intelligences theory and its use in a school library media center.

Research Design

The researcher has selected the descriptive design method of research. The descriptive design method was selected because "... the researcher does not manipulate variables or control the environment in which the study takes place. Its purpose is to systematically describe the facts and characteristics of a given phenomenon, population, or area of interest" (Merriam, 1995, p. 61).

A common technique for gathering data in the descriptive design method is the survey. A questionnaire was distributed (see Appendix A) as the means of data collection. The descriptive design method allows the researcher to survey a specific group not requiring randomization.

Population and Sample

The population for this study was school library media specialists employed in schools whose philosophies are based upon the multiple intelligences theory. Approximately 73 addresses were obtained from Harvard Project Zero, Howard Gardner’s on-going research project on multiple intelligences, and from Project SUMIT (Schools Using Multiple
Intelligence Theory). Project SUMIT, a secondary project, is also based at Harvard University. Project SUMIT’s purpose is to identify, document, and promote effective implementation of multiple intelligences.

Assumptions and Limitations

The descriptive design method of research allows the researcher to examine facts about people, their attitudes and opinions. The researcher assumes the respondents will answer honestly, give an accurate description of their school library media center, and identify their practices that relate to the application of the multiple intelligences theory.

The limitation most dominant in the descriptive design method is the lack of predictability. Merriam, states that the descriptive method allows the researcher to "...discover and describe 'what is,' but is unable to generalize or predict with certainty 'what will be'" (1995, p. 72). This limitation of the descriptive design method does not present a problem for this study as the goal is to investigate current applications of the multiple intelligences theory in the school library media center. The researcher’s intent is to institute as many multiple intelligence practices as is possible into her own school library media center. In addition, this study will be made available to other school library media specialists who would also like to include multiple intelligence practices into their own school library media centers.

Procedure

The researcher followed the sequence of steps listed below in the data collection process.
1. Wrote letter to Harvard Project Zero requesting addresses of schools with the multiple intelligences theory as their philosophy.

2. Located through the internet the list of schools being interviewed by Project SUMIT

3. Developed questionnaire.

4. Wrote cover letter to accompany questionnaire, explaining the research study and response date.

5. Prepared mailing envelopes to include: cover letter, questionnaire, and return self-addressed, stamped envelope.


7. Read returned questionnaires.

8. Analyzed responses from the survey. Compare for similar applications and practices, as well as different applications and practices.

9. Wrote a narrative summary of applications and activities received through the questionnaire.

Instrumentation

The data collecting instrument used in this study was a questionnaire (see Appendix A). The type of data to be collected will be descriptive in nature. Respondents were asked to describe physical attributes of their school library media center, and share descriptions of activities that are available, which pertain to the multiple intelligences theory.

Method of Analysis

Upon the return of the questionnaires the researcher will use a blank copy of the questionnaire to register tally marks by the physical attributes
and/or activities that respondents checked off. The items listed on other, will be listed separately on a page designated for each intelligence. The researcher will total the tally marks and present a conclusion on the practices currently being implemented in schools using the multiple intelligences theory.
CHAPTER FOUR
PRESENTATION AND ANALYSIS OF THE DATA

Demographics

Of 73 surveys sent to library media specialists, 37 went to known multiple intelligence schools, and 36 went to schools which expressed an interest in the multiple intelligences theory. The addresses were obtained from Harvard Project Zero, Howard Gardner's continuing research on multiple intelligences, and from Project SUMIT (Schools Using Multiple Intelligences Theory) a secondary study that is an off-shoot of Project Zero. Schools surveyed were elementary level and located throughout the United States and Canada.

Seven of the surveys were returned as non-deliverable. New addresses were located for four of the schools and the survey was mailed out again. The actual count of surveys sent was 70, since no new address could be located for three of the schools.

Approximately a third (26) of the surveys were returned from the following sources:

Project Zero addresses: 11
Project SUMIT addresses: 15
E-Mail response in addition to survey: 1
E-Mail response in place of survey: 1
Correspondence in addition to survey: 1
Findings and Results

Survey asked respondents to check as many categories, under each intelligences heading, as pertained to their library/media center. They were given space to add categories they have in their library media center that were not listed on the survey. These are listed under other. The results from 26 returned surveys are as follows:

Note: the (*) denotes the researcher’s library/media center.

For Intrapersonal Intelligence:

quiet reading room…..9
study carrels…..3*
study room…..5
individual games…..11
self-paced computer software…..16*
books on knowing one’s self…..17*

other: areas for quiet reading*; separate reference area; give writing prompts following a story, that ask students to look within.

For Interpersonal Intelligence:

tables and chairs for group
discussion .....24*

interactive software.....20
variety of board games.....11

other: laser disk station available for students during recess; big books to share; community based school, most activities are group work or cooperative learning; small groups meet in library for lunch and socializing*.

For Spatial Intelligence:

drawing software.....15*

charts, maps, models, puzzles.....20*

shelf displays.....20*

microscopes/binoculars.....3
wall displays.....20*

drawing material.....18
Spatial Intelligence continued:

**other:** displaying student projects*; contest that incorporate drawing; microscopes/binoculars available for check-out through library.

**For Bodily-Kinesthetic:**

- virtual reality software....3
- puppet theater....5
- open space for creative movement.....13*
- Manipulatives.....10
- stage or area to perform.....3*
- art area.....3

**other:** separate room(s) for puppet theater, open space, stage for performance*; 3-D puzzles; art manipulatives that interlock together; magnetic poetry words on a white board; “no room, limited space.”

**For Musical Intelligence:**

- musical software.....10*
- listening centers.....9
- rhyming, chant, sing or rap stories.....14*
- musical instruments.....2
- play background music.....11*
- rhythm stories.....10*

**other:** song/movement included with stories*; books on music, opera and theater; instruments in classrooms; listening center equipment available for check-out; listening centers in classrooms; music happens in our theater space, I work closely with the music teacher; play background music at various times- holidays..

**For Linguistic Intelligence:**

- comfortable seating area.....19*
- publishing center.....6
- talking books.....8
- books on tape.....20
- poetry reading.....13*
- word games.....8
- debates....1
- storytelling.....22

**other:** word puzzles put on the board; quote-of-the-week on the board; CD-ROM Living Book Series word games and debates done in classroom.
For **Logical-Mathematical Intelligence:**

- chess sets.....6*
- math manipulatives.....5
- logic puzzles and games.....8

*other:* estimating contest, number of items (jelly beans, acorns, walnuts, corn nuts) in a jar; calculators available for check-out through library; math manipulatives are in classrooms; calculators are not used often by students.

For **Naturalist Intelligence:**

- plants.....11*
- classifying games.....4
- rocks & mineral collections.....4
- animals/pets.....4*
- computer software.....16*

*other:* small aviary outside of library on patio; animals/pets as occasional visitors; library has books on the subject, especially by our parent, Elizabeth Bieset; animals/pets visit, none permanent.

Analyzing the results revealed common threads between the surveyed schools for what they provide in the school library media center, and what they do not provide. For the intrapersonal intelligences the highest percentage of responses were for books on knowing one’s self (65%) and self-paced computer software (62%); lowest percentage of responses were for study carrels (12%). For the interpersonal intelligences the highest percentage of responses were for tables and chairs for group discussion (92%) and interactive software (77%); lowest percentage of responses were for game tables (12%). For the spatial intelligence the highest percentage of responses were for charts, maps, models, puzzles, shelf and wall displays (77%); lowest percentage of responses were for microscopes/binoculars (12%). For the bodily-kinesthetic intelligence the highest percentage of responses were for open space for creative movement (50%); lowest percentage of responses were
for virtual reality software, stage or area to perform, and art area (12%). For
the musical intelligence the highest percentage of responses were for
rhyming, chant, sing or rap stories (54%); lowest percentage of responses were
for musical instruments (7%). For the linguistic intelligence the highest
percentage of responses were for storytelling (85%) and books on tape (77%);
lowest percentage of responses were for holding debates (3%). For the logical-
mathematical intelligence the highest percentage of responses were for
computer software (69%); lowest percentage of responses were for math
manipulatives (19%). For the naturalist intelligence the highest percentage of
responses were for computer software (70%); lowest percentage of responses
were for classifying games, rocks and mineral collections and animals/pets
(15%).

The collected data indicated that school library media centers are as
varied as the schools they serve. Library media specialists reported that their
media centers (most often still called libraries) were small facilities,
sometimes converted classrooms. Many of the categories listed on the survey
are part of the classrooms, not the library/media center. The use of
computers and a variety of software seem to be most common among school
library media centers.
Summary

The purpose of this research project was to investigate applications of the multiple intelligences theory and its use in a school library media center.

The literature reviewed included writings on the theory of multiple intelligences, the educational applications of the theory, examples of these applications from multiple intelligence schools, and the latest vision and goals of the school library media center as recently described in Information Power: Building Partnerships for Learning (AASL & AECT, 1998).

The descriptive design method of research was selected since “... the researcher does not manipulate variables or control the environment in which the study takes place. Its purpose is to systematically describe the facts and characteristics of a given phenomenon, population, or area of interest” (Merriam, 1995, p. 61).

The collected data indicate that school library media centers are as varied as the schools they serve. Library media specialists reported that their library/media centers were small facilities, sometimes converted classrooms. Many of the categories listed on the survey were located in the classrooms, not the library/media center. The use of computers and a variety of software was common among many school library media centers.
Conclusion

In many instances school library media specialists do not label specific areas or activities as pertaining to the multiple intelligences. Many of the surveys indicated that although their school professed to be a multiple intelligence school, the media center or library as it is still most commonly called, remains a traditional library. Several library media specialist reported their libraries were merely storage and check-out centers for books and equipment, rather than a place to use equipment, or do activities. A traditional library is an area or room where books and equipment are available for check-out, and the librarian carries out the function of checking the books in and out as well as teaching lessons on library skills to students on a set schedule. Since the library is still seen in the traditional role rather than the one described in the newest edition of Information Power, this could explain the lack of information available linking the school library media center and the multiple intelligences theory.

Several library media specialist were, however, breaking away from the traditional library, to create a more interactive environment incorporating activities around the different intelligences. Two library media specialist thanked me for sending them the survey, saying it had given them ideas on how they could incorporate some of the items off the survey into their library/media centers.

Library media centers have been in a paradigm shift since the 1960s, moving away from being just the depository of books, to being an integrated, technology-rich program, which is student centered aimed at developing a community of learners. It seems that indeed change is very slow in coming to the library/media center. Whether it is reluctance to change by the library
media specialist, or lack of support for change by the rest of the school, for some this lack of progress or slow progress is most frustrating.

**Recommendations**

Because the multiple intelligences theory is not a prescribed program, but a "philosophy of education, an attitude toward learning. . . . rather than a set program of fixed techniques and strategies" (Armstrong, 1994, p. x), any varying of room arrangement and or activities can enhance one or several of the different intelligences. The categories listed on the survey may be used as a start to help generate other ideas, lessons and/or activities. Once one thinks in the different avenues of the various intelligences, his or her own imagination will be the only boundaries. Gardner himself once stated:

*I do not believe that there is a single royal road to an implementation of MI [multiple intelligences] ideas in the classroom. I have been encouraged and edified by the wide variety of ways in which educators around the country have made use of my ideas . . . . the essence of the theory is to respect the many differences among people, the multiple variations in the ways that they learn, the several modes by which they can be assessed and the almost infinite number of ways in which they can leave a mark on the world.* (Armstrong, 1994, p. vii)
REFERENCE LIST


APPENDIX A

COVER LETTER AND QUESTIONNAIRE
Randie Munson
21923 N. 74th Lane
Glendale, Arizona
85310
E-Mail: rlmunson@hotmail.com

Librarian/Library Media Specialist
School Name
Street Address
City, State
Zip Code

Dear School Library Media Specialist,

I am a Librarian/Library Media Specialist at Copper Creek Elementary School, in the Phoenix, Arizona area. As a Masters candidate, my thesis project is to report on how the philosophy of multiple intelligences can be used in a school library media center. I found very little information published in this specific area. Therefore, I am surveying librarians/library media specialists, who are employed in schools whose philosophies are based upon the multiple intelligences theory to find out what they are doing. I received your address from either Project Zero, whom I wrote to, or through the Internet on Project SUMIT (Schools Using Multiple Intelligence Theory).

Enclosed you’ll find a questionnaire with a number of questions that I am requesting you answer about your school library media center. Please return the questionnaire by April 23, 1999. Also, at the end of the questionnaire I have provided space for your name and address. Please indicate whether you are willing to be contacted further.

Thank you so much for taking time to answer and return this questionnaire. Your response will provide invaluable assistance in learning what is being done by and with the library/library media center to enhance the learning environment for all the intelligences.

Randie L. Munson
Copper Creek Elementary
Library Media Specialist
MULTIPLE INTELLIGENCES
IN THE
SCHOOL LIBRARY/MEDIA CENTER

DIRECTIONS: PLEASE CHECK AS MANY IN EACH CATEGORY AS PERTAIN TO YOUR LIBRARY/MEDIA CENTER, AND RETURN THIS QUESTIONNAIRE IN THE ENCLOSED ENVELOPE.

DOES YOUR LIBRARY/MEDIA CENTER HAVE THE FOLLOWING?

For Intrapersonal Intelligence:

[ ] quiet reading room
[ ] study carrels
[ ] study room
[ ] individual games
[ ] self-paced computer programs
[ ] books on knowing one’s self

Other: (Please describe)

For Interpersonal Intelligence:

[ ] game tables
[ ] tables and chairs for group discussion
[ ] interactive software
[ ] variety of board games

Other: (Please describe)

For Spatial Intelligence:

[ ] drawing software
[ ] microscopes/binoculars
[ ] charts, maps, models, puzzles
[ ] wall displays
[ ] shelf displays
[ ] drawing material

Other: (Please describe)
For Bodily-Kinesthetic Intelligence:

[ ] virtual reality software
[ ] manipulatives
[ ] puppet theater
[ ] stage or area to perform
[ ] open space for creative movement
[ ] art area

Other: (Please describe)

For Musical Intelligence:

[ ] musical software
[ ] musical instruments
[ ] listening centers
[ ] play background music
[ ] rhyming, chant, sing or rap stories
[ ] rhythm stories

Other: (Please describe)

For Linguistic Intelligence:

[ ] comfortable seating area
[ ] poetry reading
[ ] publishing center
[ ] word games
[ ] talking books
[ ] debates
[ ] books on tape
[ ] storytelling

Other: (Please describe)
For Mathematical-Logical Intelligence:

[ ] chess sets
[ ] calculators
[ ] math manipulatives
[ ] computer software
[ ] logic puzzles and games

Other: (Please describe)

For Naturalist Intelligence:

[ ] plants
[ ] animals/pets
[ ] classifying games
[ ] computer software
[ ] rock & mineral collections

Other: (Please describe)

Would you be willing to be contacted in the future? [ ] YES [ ] NO

If yes, please give your name and address and/or your E-mail address below.

Name:

Address:

E-Mail Address: