A COMPREHENSIVE LITERATURE REVIEW AND CRITIQUE ON THE IDENTIFICATION OF METHODS AND PRACTICAL APPLICATIONS OF ACCELERATED LEARNING STRATEGIES

By

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A Research Paper

Submitted in Partial Fulfillment of the
Requirements for the
Masters of Science Degree
With a Major in

Education

Approved: 2 Semester Credits

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August 2001

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Abstract

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A Comprehensive Literature Review and Critique on the Identification of
(Title)

Methods and Practical Applications of Accelerated Learning Strategies

MS Education Dr. Ed Biggerstaff August 2001 39
(Graduate Major) (Research Advisor) (Month/Year) (No. of Pages)

American Psychological Association (APA) Publication Manual
(Name of Style Manual Used in this Study)

History has demonstrated that confronting issues which reflect the changing dynamics of our society has often been a catalyst in the creation and development of inventions, new technologies, the study of innovative disciplines, and the application of alternative approaches.

A sample of current issues include such topics as: national trends toward standardized tests; academic performance-based accountability of school administrators and faculty; increasing difficulty in managing the escalating flow of information; increasing stress among college freshmen, as indicated by a 1999 survey; and, the necessity to successfully maneuver in a knowledge-based society.

These issues, among others, have prompted a handful of educators to examine the cognitive science of learning. As described by the North Central Regional Educational Laboratory, cognitive science is the focus on how, rather

than what people learn. Utilizing this approach, practitioners focus on teaching methods and strategies that help learners develop and use inherent tools for successful learning. This alternate approach of reengineering how we learn is also called accelerated learning.

The purpose of this study was to identify and examine the methodology and employment of accelerated learning strategies through a comprehensive review and critique of the research and literature. Based upon critical analysis of the research and literature, the researcher has made conclusions and recommendations.

Acknowledgements

Thank you to Curley McDonald, Jr. and Joan Harriese McDonald, my ever supportive parents who have encouraged me to reach beyond the stars. Without their love, encouragement, and support I would have not been able to accomplish my endeavors. To my good friends of the Oglala Lakota Sioux and Ojibwe Nations, and Dr. Mari E. Nelson, thank you for helpful enlightenment and contributions that have grounding me in the roots of my heritage. Thank you Dr. Ed Biggerstaff, my advisor for your eager assistance, support, and patience while completing this research.

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CHAPTER ONE

Introduction

"The illiterate of the future will not be the person who cannot read. It will be the person who does not know how to learn" Toffler (cited in Creative Quotations, 2001, p. 1).

Today's society is changing at an ever-increasing pace, especially in light of globalization, increasing population, the eradication of diseases and the decoding and positive utilization of the human genome. Since 1980, this researcher alone has witnessed the technological advances of a computer revolution, evoking sweeping change at an exponential rate of growth. At no other time in history has society attempted to manage the magnitude of such vast proportions of knowledge and information. Over the past 30 years, more information has been produced than during the previous 5000 (White & Dorman, 2000). White and Dorman reported "Physicians attempting to keep up in their field need to read an average of 19 original articles every day" (2000, p. 28).

Moreover, increasing demands in the workplace have prompted the desire for greater productivity, a computer literate workforce that is adaptive, flexible and receptive to changing dynamics in the marketplace. Employers also demand employees who have the ability to retain relevant information and job knowledge. The acquisition of these tools may be more essential than ever for college graduates as they find it increasingly difficult to enter the job market during the current economic slump (Armour, 2001).

Further compounding the complexity of our changing society is the increasing stipulate for standards and accountability in public education. The shift to administer standardized tests has created a chain of circumstances that affect the student, teachers, administrators, and parents. At issue, in part, is what standard encompasses the embodiment of expectations, level of achievement, values, and pedagogical principles of a particular region, state, district, community, or school system? More importantly, if schools are subjugated to performance-based assessment, should a significant number of students not pass the test, federal funding and accreditation become jeopardized. This scenario can lead to a spiraling dissipation of confidence in the school system. Furthermore, both administrators and teachers may be held accountable, affecting motivation, their perception as educators, performance evaluation, tenure of stay, and salary. Should parents, concerned about their child's performance, remove their pupil from the system to administer home schooling or placement in a charter school, districts will be affected adversely by a decrease in school-funded property taxes. Diminishing property taxes in turn, directly affect school programs and incentives, teacher employment, teacher-to-pupil ratio, extracurricular activities, and the like. In light of a performance-based model for standardized testing, one must also contemplate whether the high stakes at risk will merit some educators to teach students toward taking the test as an alternative to appropriate pedagogical approaches in providing education.

In this new society, the pedagogical challenge is to provide efficient, well-timed, integrative learning opportunities designed to sustain the changing demands of the audience it serves. In doing so, the educator must capture the attention and motivation of a better-informed audience, while establishing connections between the learning process and its applied application to the learner.

Embracing further developing methods, which incorporate models of accelerated learning, may fulfill this mandate. One might say that an accelerated society requires accelerated teaching and learning methods in the exchange of information and knowledge. Employment of accelerated learning models utilizes comprehension of how we learn in order to provide processes that efficiently affect cognition and understanding. Additionally, we must acquaint ourselves with the exploration of other alternative, nontraditional educational models that can be incorporated in learning processes such as multiple intelligences, psychological type, brain-based, cooperative, and integrative learning. Recognizing the importance and demonstrated success of such an effective delivery system, the National Academy of Sciences has acknowledged accelerated learning as a breakthrough in learning development (de Tagle, 1988).

Statement of the Problem

Confronting the issues of changing dynamics that impact education implies that educators customarily assess pedagogical approaches to include cognitive learning models that demonstrate effective, supportive, and if

necessary, innovative delivery systems. Examining how we think, learn, and are impacted by the environment in which we live must parallel the delivery system of our pedagogical approach.

Purpose of the Study

The purpose of this study was to identify and examine the methodology and employment of accelerated learning strategies through a comprehensive review and critique of the research and literature. Based upon critical analysis of the research and literature, the researcher has made conclusions and recommendations.

Definition of Terminology

In order to provide an appropriate framework for the comprehension of material contained within this study the following definitions of terms are provided for the reader.

Accelerated Learning: also known as suggestopedia, a method of learning first developed in 1967 by Bulgarian doctor and psychologist Georgi Lozanov. The method utilizes comprehension of neurophysiology enabling the capacity for greater comprehension, understanding, and doing so in less time than that of traditional teaching methods.

Alpha Brain Wave: of the four basic brain waves, Delta, Theta, Alpha, and Beta, the Alpha wave is responsible for creativity, reduction of stress and anxiety, provision of strength to the immune system, and aids in peak performance.

Attitudes: in relation to psychological type, there are four attitudes, extroversion, introversion, judging, and perceiving which indicate an individuals' source of energy and attitude toward the external world.

Autogenic conditioning: a method designed to amplify brain alpha waves creating a heightened state of learning readiness.

Cooperative Learning: a model of learning based on researchers Roger T. Johnson and David W. Johnson at the University of Minnesota. The educational model consists of developing a relationship in a group whereby the group becomes interdependent and each individual member is individually accountable, learn interpersonal skills, have face-to-face interaction, and processing.

Functions: in relation to psychological type, there are four functions, sensing, intuition, thinking, and feeling which indicate an individual's way of gathering or taking in information and coming to conclusions.

Integrative Learning: often associated with Howard Gardner's theory of multiple intelligences; the utilization of multiple teaching methods that acclimatize a variety of learning styles.

Learning Style: the type of learning that is best suited for an individual to process information, based on that person's individual preferences.

Myers Briggs Type Indicator: developed by Katherine Cook Briggs and Isabel Briggs Myers, an instrument using the theory of psychologist Carl G. Jung to understand differences between the preferences of individuals.

Psychological Type: an underlying personality pattern resulting from the dynamic interaction of our four preferences, environmental influences, and our own choices (Myers Briggs, 1998 p. 8).

Limitations of the Study

Although the researcher has participated in facilitating accelerated learning methods and alternative approaches to learning, this study does not include a first-hand empirical quantitative research assessment. The researcher considers this to have been a limitation to the study.

CHAPTER TWO

Literature Review

Introduction

In this chapter the researcher reviewed the body of literature and research related to accelerated learning and alternative approaches to nontraditional pedagogical and learning approaches. The investigation of literature on the topic of accelerated learning and alternative approaches provided a framework for understanding the dynamics, issues promoting the employment of strategies, methods, and approaches, as well as the development of conclusions and recommendations.

Theoretical Framework

The first practitioner of accelerated learning was Dr. Georgi Lozanov, a Bulgarian psychologist who utilized non-traditional methods of teaching and learning English to students in 1967 (McKeon, 1995). Using Baroque music as students entered the classroom, Lozanov created a relaxing environment prior to instruction of the material. Additionally, telling learners that they would easily absorb the information and how he would manage the session provided reassurance. After preparing the students for the lesson, Lozano used both visual stimuli and auditory reinforcement while students read prepared text silently. Occasionally, students were told to relax, close their eyes and breath deeply while Lozano read translation text to the class and played music. Lozano's integration of relaxation, visual arts, and music, as a method of learning a foreign language allowed students to learn up to one thousand new

vocabulary words a day, with a ninety-eight percent retention rate (DePorter, 1998). Lozanov described this method of learning as "suggestopedia" or "suggestology" whereby the various techniques were used to stimulate the left and right sides of the brain to work collectively causing more productive learning (McKeon, 1995).

Although the method of accelerated learning was used in some eastern European countries, it was not implemented in the United States until 1980 (McKeon, 1995). David Meier, a training and development specialist began utilizing Lozanov's theories and founded The Center for Accelerated Learning. According to Caine and Caine "The Center for Accelerated Learning undertakes to equip participants with strategies and techniques to significantly improve both the speed and the quality of learning" (1989, p. 65). In the present day there have been a variety of adaptations in the application of accelerated learning including the use of Howard Gardner's theory of multiple intelligences (Nicholl & Nicholl, n.d.) to understand learning styles, neuroscience, cognitive development, and, even the use of humor (McKeon, 1995) in order to incorporate effective teaching and training methods.

One important aspect that cannot be overlooked while examining accelerated learning is the cognitive process of the brain. Learning is affected by a multiplicity of stimuli including active problem solving, human interaction, and cultural immersion. Language research has indicated, for example that newborn babies prior to the age of six months have the ability to distinguish speech sounds for all languages of the world (Meltzoff, 2000). According to

Meltzoff (2000), even though Japanese adults do not distinguish between the letters R and L in their language, babies prior to the age of six months can. As babies grow to about the age of one, affected by their cultural immersion, they lose the ability to distinguish phonetically between the letters R and L. In this case the influence of language and cultural have created an environment affecting development, or what is referred to as neural sculpting. This demonstrates the powerful influence that environment can have in the development of how we learn and process information.

Accelerated learning attempts to bridge the gap between right and left-brain processing. Typically, the left side of the brain is attuned to sequential processing and analyzing information while; the right brain processes spatial patterns, relationships and, visual memory (Springer & Deutsch, 1985). Teaching a holistic approach of utilizing both the left and right brain, practitioners attempt to provide visualization, imagery and, relationships as students process analytical, detailed material to be learned. By this method, students are afforded greater opportunities to learn and absorb information by use of whole-brain processing. Additionally, the method also stimulates the alpha wave in the brain while reducing beta waves during the relaxation segment, according to Lozanov's electroencephalographic study (as cited in Bancroft, 1997). Increased alpha wave brain activity assists individuals in their creativity, reduces stress and anxiety and, aids in peak performance.

There are four phases in the accelerated learning process: preparation, acquisition, integration and, application. The goal of the preparation phase is

to create an environment that is non-threatening, soothing and, relaxing while generating a state of eagerness for learning. Referring to this phase as relaxed alertness, Caine and Caine (1989, p. 69) provide the following insight:

> Research shows that when people feel threatened, they "downshift" – threats narrow their perceptual fields so that they respond to situations with less flexibility and effectiveness. Challenge, on the other hand enables them to take risks with safety, security, and confidence, allowing them to commit and involve themselves fully.

Creating such an environment can be accomplished in a variety of ways. An instructor may wish to play soothing music as students enter the classroom for example, or design the classroom (or other learning location) with colorful decorative items relating to the topic may be helpful. Creating an environment that fosters use of the imagination, constructs nurturing relationships and, supports comfort can be easily accomplished and is limited only by the imagination of the facilitator. Furthermore, to mentally prepare the audience for the learning experience the instructor should affirm to students that the learning topic will be both beneficial and easily comprehendible.

> You accelerate learning when you provide a relaxed, positive atmosphere and reduce the fear of failure. The right brain is highly influenced by emotions, and the more relaxed it is, the more creative and efficient it is in promoting the total learning process (Richards, 1993, p. 16).

Reducing the threat by creating an environment that is relaxing, yet stimulating provides the learner with optimum preparation for engaging the material to be taught.

The next phase of accelerated learning is acquisition. During the acquisition phase, the instructor disseminates the topic or lesson content. This is done with the use of tools such as mind mapping and other formats that assist the learner in making familiar connections and associations with the material to be learned. By making familiar connections and associations, the learner is more easily able to expand common knowledge in order to apply that knowledge to the new material being presented. Although there are many ways of doing this, the use of imagery can be very effective. If an instructor were teaching biology students about semi permeable cellular membranes, the instructor might ask the students to close their eyes and imagine that they were a very large, very thick sponge. The instructor would continue by providing great detail about the sponge's appearance including, its unusual shape in the form of a bathtub. Next the instructor explains that suddenly someone has decided that a soothing, hot bath would be nice. The water is turned on and the sponge bathtub is filled equidistant. The instructor then allows time for the students to visualize what effect would take place. Following this visualization, the instructor may lead the class with imagery that allows them to be the same bathtub shaped sponge that is being placed on a calm ocean surface. With the instructor's guidance, students have just visualized water slowly seeping from the inside of a sponge bathtub to the floor

on the outside of the tub. Additionally, the student's have visualized the slow emergence of saltwater moving from outside of a sponge bathtub to the inside of the tub. Although the visualization exercise was seemingly elementary, the instructor has not only provided students with an example of a semi permeable membrane but has also accomplished the goal of establishing familiar connections and association. By aid of this visualization, recalling the learned information comes with greater ease and provides a greater depth of understanding.

Integration is the third phase of accelerated learning. During this phase of learning the instructor uses games, debate, stories or other creative forms in order to review and integrate the lesson topic. As learners discuss the topic they become more familiar and comfortable with it. Author Ron Zemke states "Whatever else, a story is, it is also a powerful teacher. Advertisers know it. Socrates knew it. So did Aesop, Jesus, Muhammad, Confucius, and Mark Twain" (as cited in McKeon, 1995, p. 2). The use of stories, metaphors and, other tools assist the learner in relating the learning material to easily understandable analogies and situations.

The final phase of accelerated learning is application. During this phase the instructor engages students to apply the lesson topic to practical, real life situations or problem solving situations. Students are encouraged to engage the knowledge that they have learned by developing further connections and associations that are personally meaningful.

Methods and Strategies

Methods and strategies of accelerated learning use comprehension of neuroscience and learning styles to provide students with a multi-sensory accumulation of knowledge. There are three types of knowledge that individuals acquire: procedural, declarative and, natural (Caine & Caine, 1989). Procedural knowledge is the acquisition of information that allows the learner to understand how to perform a particular task. Declarative knowledge requires that an individual possesses information to understand how an item or process functions. For example, in order for a naval aircraft carrier pilot to learn how to perform a search and rescue mission, a significant degree of declarative knowledge is required. The pilot must have an understanding of the dynamics of flying, landing and takeoff on a moving flight deck, avionics and, various Naval procedures. In this case, learning procedural knowledge requires declarative knowledge. An individual possesses natural knowledge when he or she can demonstrate such familiarity that the person is able to react spontaneously in applying that knowledge. A person who has acquired natural knowledge can easily apply that knowledge to different applications and is able to acquire additional knowledge easier in the area of their mastery. For example, having natural knowledge of cuisine, a chef may perform very well as a judge in a cooking contest and, would be able to provide immediate feedback to participants or an audience based on the chef's knowledge and ease of comfort about cuisine. Additionally, even though the chef only has

experience with pastries, it is most likely that learning how to prepare soufflés will come with greater ease than someone without knowledge of culinary arts.

Developing natural knowledge is absorbed by multi-sensory stimuli. When a person has acquired a natural knowledge of cooking the processes of taste, visual appearance, smell, the surrounding environment, cultural immersion, and personal interaction were contributors. The familiarity of these contributing factors also allows for a more relaxed and eased state of cooking. The cook for example, does not solely rely on a cookbook to cook rather, the familiarity of a kitchen, previous experience, the look of the food, smell and the taste of the prepared dish. Understanding this concept provides the foundation for accelerated learning methods and strategies. Practitioners orchestrate an environment conducive for optimal learning. Fostering non-threatening yet eager anticipation for learning, provision of multi-sensory instruction and, the development of connections and associations that cultivate natural knowledge produce the environment.

In some respects this is perhaps what educator, psychologist and, law professor Jerome Bruner referred to when recommending that educators promote and explore intuitive thinking as a fundamental process of education (1960). The goal of developing intuitive thinking skills is to develop supportive encouragement of an individual's natural knowledge base on a subject matter. In doing so, the student will begin to connect the unrelated to related and familiar applications of the material. Bruner uses the example of understanding tropism as it relates to locusts feeding; oxygen levels at their

maximum altitude and crossbreeding on a mountainside. Understanding the concept of tropism provides the student with a better understanding of the biodiversity and behavior of the locusts, in addition to the behavior of other biological species.

Catalysts Promoting Alternative Forms of Education

Validations for examining nontraditional forms of education are many however; one of the most persuasive is the shifting paradigm of education. According to Beale (1997) there have been significant changes in the assumptions between nineteenth and early twentieth century paradigms compared to the present. Of the earlier period, Beale indicates that the paradigm assumed that information was to be distributed in smaller portions while being presented in a linear, logical manner. Expectations for students were limited under this paradigm and there was an emphasis placed on analytical left-brain thinking. Certain social expectations and norms were expected and lastly, the classroom was not designed for the individual student rather, its propose in design was that of efficiency and of convenience. According to Beale, contrasting assumptions for the current paradigm include that there are large amounts of information to be consumed and that it is presented globally; that unlike previously believed, learners have the ability to absorb knowledge three to five times faster than thought and; that there is a movement toward whole-brain thinking and processing. Additionally, there is a focus on individual performance with the concept of unlimited potential for learners. Finally, assumptions of the new paradigm include environmental

affecters such as comfort and other aesthetics for learners. A reflection of our changing world, these shifting assumptions adds significant perspective to the dynamics in delivering education with methods that meet the needs of students in a society of constant change.

There are numerous forces changing the complexity of higher education for example. Levine (2001) reports that "…shifting demographics, new technologies, the entrance of commercial organizations into higher education, changing relationships between colleges and federal and state governments, and the move from an industrial to an information society" (p. 54) are changes that will affect colleges in the future. Among the changes that are indicated in Levine's assessment include a shift from teaching to that of learning. Instead of colleges concentrating on billing students for classroom time, there will be a shift towards providing various mediums for learning. Some delivery mediums will undoubtedly promise provisions of alternative, nontraditional forms of delivery. The focus of delivery in education will shift to accommodate the needs of the learner. With this in mind, we must also acknowledge, as Levine supports, that an increasing number of educational institutions, public, private, and commercial, are attempting to fill the gap for the desire of learners to obtain knowledge. As competition grows in the market to attract students, institutions that do not provide a delivery system based on the needs of their clients may face difficult recruitment challenges.

Continuing escalation of college tuition has also merited student consideration for programs that can offer nontraditional means of education to

reduce cost. Over the past ten years for example, the average cost of tuition at four-year colleges has risen 51.2% (Wong Briggs, 2001). Staff writer Tracey Wong Briggs of USA Today newspaper reported that for the 2001-2002 academic year, Ohio State University increased instate undergraduate tuition by 9.3% and, the University of Minnesota approved a 13.3% tuition increase. A program such as accelerated learning has the potential to afford students the possibility of reducing the amount of time and money spent to complete a degree or certificate program.

Practical Applications

Supporting evidence for promoting the use of accelerated learning techniques can be found when examining the demands for changing social and economic conditions for prospective and current college students. In response to the increased stress among college students, as outlined in a survey of 261,217 students at 462 colleges and universities (Sax, Astin, Korn, & Mahoney, 1999) for example, the use of autogenic conditioning (Kiefer, 1995) would aid in reducing the level of anxiety and stress among the student population. This method promotes a philosophy of conditioning your own mind rather than having others do so.

One autogenic technique illustrated by Kiefer (1995) is that of 'Imagineering'. Using this technique, an individual identifies a goal, a descriptive paragraph known as the imagineering sequence, and a word or phrase that will act as the trigger to activate the sequence. Once the individual establishes the goal, receiving an A on an oral presentation for example, the

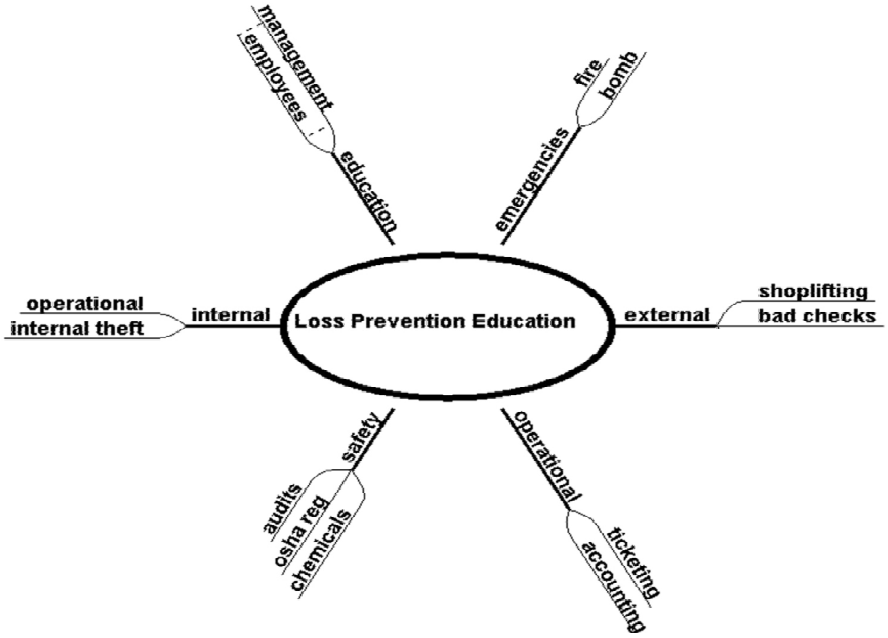
individual creates a descriptive paragraph that will promote the successful accomplishment of that goal. An exemplar paragraph might include the purpose for receiving an A, how the student will prepare for the presentation, and how, with ease, the student will absorb the presentation material. Additionally, the student will visualize giving a good performance during the presentation while imagining the intent interest of the class and expressing high confidence while walking to the podium. Finally, the student visualizes receiving the intended grade. After repeating the paragraph several times a day, then once daily, the sequencing paragraph becomes internalized. The individual can then use the trigger word to recall the paragraphs' goal, positive motivation, mood, feeling, and other emotions and affirmations that are associated with it. The use of this technique not only aids the student during the oral presenting, but also provides greater confidence, clarity, productivity, and vision while developing the presentation.

Establishing both positive verbal and synthetic self-affirmation as a student begins a course of study, a chapter of reading, taking an examination, or giving a presentation can reduce stress and positively affect comprehension and performance.

Although the researcher has illustrated an example to be used in a post-secondary environment, it should be noted that the same techniques and methods could be applied at any level of instruction. The philosophy of spiral curriculum (Bruner, 1960) in which an instructor applies appropriate adaptation to meet the developmental needs of the student population enables any

subject or concept to be taught at any level. Therefore, using appropriate developmental adaptation, this same application can be utilized with a fifth grade pupil as well as a college freshman.

Another practical application of accelerated learning methods and techniques is that of mind concepts or mind mapping. Mind mapping is a creative tool, developed in the late-nineteen sixties by Tony Buzan as a means of visually taking notes by use of imagery and key words (Russell, n.d.). Because this model utilizes similarities in how the brain operates in developing visual and mental connections by means of association, the method can increase the speed, efficiency, and retention of material when used as a note-taking tool. This associative learning model compared to linear note taking also provides opportunities for the student to insert personal, specific visual cues that will assist them in recalling information. An example of a mind map is illustrated by the following diagram:



Merits of using mind maps include that it is instrumental as a tool to stimulate creativity; it provides a two-dimensional outline format; allows for easy additions or corrections; can utilize color as an aid for comprehension; provides an instant 'big picture' view; and, is more easily memorized as a snapshot techniques for reviewing notes. Mind mapping also integrates the left and right brain while helping the user organize ideas effectively with clear delineation of relationships (Alexander, 1994). Mind mapping can be an instrumental aid to reading comprehension (Richards, 1993). If a literature student for example, used the method of mind mapping while reading a book by organizing each chapter by a central theme then, using offshoots as subcategories the student would have an open-ended structure to record thoughts, themes and, relevant information. Upon completing the book the student has established relevant, meaningful connections and relationships by use of visual representation. Using the mind map, the student can then summarize thoughts and information to develop a book review, critique or, report. Additionally, the process of self-regulating the reading activity while reviewing the information allows time for reflection of thought and processing. Such opportunity for reflection, thought and, development of how the student derived at their summaries and conclusions encourages metacognition (Maitland, 200). Metacognition, in other words, is an active process whereby an individual is stimulated into thinking about how they think and how an individual comes to their conclusions (Caine & Caine, 1989).

Additional evidence that associating information by use of mind maps are supported by the theory of chunking (Miller, 1956). George A. Miller, professor of psychology at Princeton University in studying information management, found that the brain in seven 'chunks', plus or minus two could hold knowledge. If each chunk represented a fact, then the mind is limited and cannot collect more than the seven chunks of information. If, however, a 'chunk' contained interconnected facts or a network of related facts, the amount of knowledge the brain could absorb was unlimited. Miller's conclusions make a powerful statement that supports the positive utility of utilizing mind mapping as a tool for the successful attainment of knowledge.

Other Nontraditional Teaching Methods

One nontraditional teaching method includes the application of psychological type in promoting means to assist the needs of learners. The Myers Briggs Type Indicator (MBTI) is a self-report questionnaire developed by Katharine Cook Briggs and her daughter, Isabel Briggs Myers (Myers Briggs, 1998). The instrument embodies the theoretical philosophies of Swiss psychologist Carl G. Jung who sought to explain normal differences in healthy people (Myers Briggs, 1998). Jung's theory ascertains that individuals select particular preferences or tendencies for how they function, approach problem solving, and the like that feels most comfortable to them. One person for example, may prefer to put toothpaste on a toothbrush prior to adding water, while another person may prefer to add water first before applying toothpaste.

Although each is capable of performing the task either way, the individuals involved have a favored preference for completing the activity.

By completing the MBTI questionnaire, an individual is able to assess their personal style preferences in relation to attitudes and functions. Although all individuals use each of the four attitudes and functions, we are usually drawn to prefer a combination of two specific attitudes and two specific functions.

Attitude refers to a preferred style of how individuals express themselves outwardly to the external world. There are four attitudes, which include extroversion, introversion, judging, and perceiving.

The first of these attitudes, extroversion and introversion refer to how an individual prefers to focus attention and draw energy. Those who prefer extroversion are energized by the outside world. Individuals who prefer extroversion usually prefer to focus their attention on people; are accustomed with their external environment; prefer oral communication; problem solve by talking through issues and sharing with others; and are social and outgoing. Introverts prefer to draw their energy from their inner world. Individuals who prefer introversion are reflective thinkers; prefer written to oral communication; respond with initiative to issues that are deeply important to them; are private and less attuned to social interaction in comparison to extroverts; focus on thoughts and concepts; and, enjoy working individually or with small groups verses large working groups.

The remaining attitudes, judging and perceiving, indicate an individuals' lifestyle, or orientation to dealing with their outer world. Judging individuals often find that they prefer to be organized; tend to operate by having planned activities and schedules in advance; are disrupted by unscheduled changes to their plans; are systematic; often set goals; and establish deadlines. Those who prefer perceiving are spontaneous; flexible to change; often feel constrained by schedules; and are casual and adaptive.

In addition to attitudes, there are four functions: sensing, intuition, thinking, and feeling. They are referred to as functions because these preferences are not visible from external means; how one processes information and comes to conclusions is an individually internal process.

The sensing and intuition functions are ways in which individuals gather information. Individuals preferring sensing are less oriented towards abstract ideas and more toward practical application; prefer detailed and factual information; are reality based; are pragmatic; are oriented in reality and focus on the here and now. Individuals who prefer intuition are creative and imaginative; formulate meaning and patterns from detailed information; are theoretical; tend to focus on the 'big picture'; follow hunches based on their experiences; and focus on future possibilities.

The judging and feeling functions refer to how individuals make decisions. Judgers prefer to make decisions with objectivity; are often impersonal and emotionally detached with their decision-making processes; weigh reason and logic; and prefer rational, analytical methods. Those who

prefer feeling exhibit subjectivity while weighing individual circumstances in their decision-making processes; utilize their personal values; seek to promote harmony; display compassion and empathy; and desire humane approaches.

Paired with it's opposite attitude and function, the MBTI chart is displayed as:

Extroversion	E	I	Introversion
Sensing	S	N	Intuition
Thinking	T	F	Feeling
Judging	J	P	Perceiving

The total combination of personality types resulting by use of the indicator results in sixteen distinct personality types. Each type has a unique combination of preferences that distinguish differences among individuals. It is important to note that the personality types are preferences and are not traits or personality assessments. The total number of preference types are usually expressed by the following diagram:

ISTJ	ISFJ	INFJ	INTJ
ISTP	ISFP	INFP	INTP
ESTP	ESFP	ENFP	ENTP
ESTJ	ESFJ	ENFJ	ENTJ

Although the types share some similarities, characteristics that define each of the preference types are unique. This is illustrated by the following examples of two different preference types. ESTJ summary characteristics, according to Myers Briggs (1998, p. 13) include:

> Practical, realistic, matter-of-fact. Decisive, quickly move to implement decisions. Organized projects and people to get things done, focus on getting results in the most efficient way possible. Take care of routine details. Have a clear set of logical standards, systematically follow them and want others to also. Additionally, individuals preferring ESTJ are typically forceful in implementing their plans.

While Myers Briggs indicated that an INFP would exhibit the following summary characteristics:

> Idealistic, loyal to their values and to people who are important to them. Want an external life that is congruent with their values. Curious, quick to seek possibilities, can be catalysts for implementing ideas. Seek to understand people and to help them fulfill their potential. Adaptable, flexible, and accepting unless a value is threatened.

A higher level of understanding can be applied to psychological type by studying the theories of type dynamics and type development. According to Myers and Kirby (1994, p. 1):

> Type dynamics is the basic structure that opens the door to a three-dimensional and more accurate picture of each type. Type differences

> are more complex than the characteristics associated with each preference. The interaction among the prefers is the key to understanding type at a deeper level. Type development, which is based on type dynamics, suggests the probable path of development and growth for each type. Jung's theory of psychological type includes a model of development you can use to better understand people, as well as to consciously foster your own and others' potential for growth and development.

In addition to each of the four lettered types and based on each type, individuals exercise dominant, auxiliary, tertiary, and inferior functions. Type dynamics is the four preferences (of these functions) in an individual (Baughman, 2001). The dominant, auxiliary, and inferior functions possess an introversion or extroversion attitude. For example, while a person may possess a dominant preference for sensing, that dominant preference may be oriented toward the outer world (extraversion) or toward the inner world (introversion). Dominant and auxiliary functions are most frequently used while the tertiary is less developed and the inferior function, being the least preferred takes a considerable conscious effort to use.

Acquiring understanding of psychological type can be a powerful tool for both the learner and educator. For the learner, an understanding of psychological type provides self-awareness, insight, and perspective in the identification of one's learning style and problem-solving skills. Additionally, the learner is provided an opportunity to appreciate the differences among

other learners and by understanding the diversity of psychological type, a better grasp of an instructors' teaching style.

For the educator, comprehension of psychological type provides a potent foundation for administering instruction suited for diverse audiences. According to Demirkol, E., Sebastian, T., and Stangland, E. "Knowledge of type can affect teaching strategies and assignments, course structure, method of student evaluation and curriculum development" (1998, p. 1). Drawing on the groundwork of type, the instructor can provide lessons that utilize a variety of approaches that build better connections to students. An instructor, for example, knowing that a student's preference type is ISTJ would have an understanding that as an introvert, when addressed in class the student may desire more time to think about the answer to questions than an extrovert; would most likely prefer to work independently or have one-on-one instruction verses large group settings; and may prefer having instructions for an assignment prior to beginning it for reflective thought. Knowing that the student is a judger, the instructor would have an understanding that the student prefers class instruction that is well thought out with organized goals and objectives; that changes to the class syllabus would cause some disruption and uneasiness; and that surprises to the class schedule are unfavorable. As a sensor, the instructor would have an understanding that the student prefers to have instruction that is detailed oriented; demonstrated application of the material; and prefers less abstract and theoretical instruction. As a thinker, the instructor would understand that the student prefers objectivity, logic, and

reason. Having this knowledge, an educator can better understand how to meet the needs of his or her students. If a student did not respond in discussion, an instructor would not assume for example, that a student is uninterested in class discussion; rather that the student, or students, may have a preference for introversion and may just need time for reflection. However, this does not mean that the student should necessarily be excused from class discussion. An alternate approach would be for the instructor to provide questions for discussion in advance allowing introverted students an opportunity for reflection giving them enough time to prepare and participate fully in the class discussion. This is one of many examples that can be drawn from the discovery of understanding psychological type. Additionally, there are a variety of situations rich with opportunities for educators to make assumptions about students in the classroom based on a lack of understanding psychological preference type. The advantages of utilizing psychological type in the classroom can be far-reaching and beneficial to both the student as well as the teacher.

Programs in Practice

An assortment of programs employing methods of accelerated learning have been implemented and utilized since 1960, including both public and private educational institutions, government agencies and, in business and industry. Elementary schools such as Horton School in San Diego, California has used accelerated learning tools such as music and visual imagery to help students learn. Barbara Dillon, a teacher at Horton School, explained that she

used classical music as a tool to facilitate accelerated learning in her classroom (personal communication, July 19, 2001). Incorporating this method during the preparation phase of the lesson she felt assisted her students in the learning process. Additionally, Dillon incorporated visual props as imagery into her lesson plans, such as characters that dressed up like Daniel Boone, to help students personalize their learning experience.

According to Marx, "By mid-century, no single racial or ethnic group will be a significant majority of the U.S. population" (2001, p. 5). Realizing the complexity of globalization and possessing the desire to foster an improved relationship with citizens, an agency adopted accelerated learning as a tool to accomplish their goal. In an effort to provide cross-cultural and community development training for police officers in Lakewood, Colorado, the department implemented accelerated learning methods to teach officers Spanish as a language (Youngs & Novas, 1995). After researching comparisons with traditional language education programs, the department determined that the accelerated method provided greater immersion and retention of the language to be learned. Novas states "…officers must develop sensitivity toward other cultures and understand the meaning of words in the context of specific situations. Accelerated learning fulfills these requirements" (1995, p. 15). While traditional programs teach linear progression, which is difficult to recall, the accelerated learning method allowed for officers to learn quickly with a deeper understanding without being encumbered by such items as grammar rules. During the process, officers engage in exercises such as role-

playing in order to provide different teaching approaches when addressing the variety of learning styles possessed by officers.

Demand in the marketplace is what brought an accelerated learning program to Becker College (H. Hewitt, personal communication, July 19, 2001). The small liberal arts college was founded in 1784, located in Worcester, Massachusetts and, hosts an enrollment of one thousand seventy-seven. The accelerated learning program offers students a Bachelor of Science degree in Administration with a completion time of two years. According to Heather Hewitt, a consultant for implementing the program, the response has been very positive. Becker College designed the program with the nontraditional student as the target audience. Most students enrolled in the program are twenty-five years of age or older and have formerly had some previous experience in college.

Another accelerated learning program in practice is being used at Emmanuel College in Boston, Massachusetts. The school was founded in 1919 by the Sisters of Notre Dame de Namur and is a liberal arts institution with an enrollment of fourteen thousand students. Offering both undergraduate and adult and graduate programs, the accelerated learning component began in 1991 and is geared towards the adult and graduate curriculum (E. Boyentoudja, personal communication, July 20, 2001). Ellen Boyentoudja, Assistant Director of Accelerated Programs at Emmanuel College indicated that the Bachelor of Science degree in Business Administration consists of a curriculum based upon a series of five-week courses. During the week students meet from 6 p.m. to 10

p.m. and are expected to complete 20 hours of academic work on their own per week. The typical student, according to Boyentoudja has already obtained an Associate degree or has had some experience in college, is between the ages of thirty to thirty-five and, is attempting to add qualifications in a career for advancement or promotion. The selection of faculty for teaching the accelerated learning program requires that candidates spend one-half day under observation while completing a structured activity. The structured activity allows the university to assess whether or not candidates possess and can demonstrate the theoretical components of accelerated learning. If asked to continue with the selection process following the assessment, candidates receive a personal interview and, if hired begin an orientation program with a teaching mentor who will assist the new hire develop their skills and proficiency as an instructor of accelerated learning methods.

CHAPTER THREE

Conclusions and Recommendations

Conclusions

A review of the literature indicates a society that has experienced, and will continue to experience significant changes. As a microcosm of changing dynamics that have impacted society, expectations and assumptions of education have also been impacted. The necessity for individuals to manage, acquire, manipulate, process and, retrieve relevant information is critically important. More importantly, information is of little use if one cannot identify what is relevant and cannot convert relevant information into knowledge. The future foundation of the educational institution may very well be of diminishing importance if they are unable to provide learners with the ability to appropriately process information into useful natural knowledge. Accelerated learning is comprised of four phases: preparation for the acquisition of knowledge; acquisition of the content of specific information; integration of the information into knowledge by way of building related connections and associations and; application of knowledge to real life practical situations. The model of accelerated learning stimulates an individual's inherent, natural ability as a tool for processing and developing natural knowledge during the learning process.

Accelerated learning as well as other forms of alternative learning use integrative learning processes to engage whole-brain pedagogic approaches to learning which, enables the learner to more easily retain, comprehend and,

absorb knowledge. This method engages the learner to actively participate in the learning process. Much like the philosophy of cooperative learning, all participants, both students and teacher in the classroom become interdependent. Educational institutions such as Becker and Emmanuel Colleges utilize accelerated learning programs while others; such as the engineering department at Purdue University have amalgamated alternative learning models such as psychological type (Demirkol, E., Sebastian, T., & Stangland, E., 1998) into their curriculum. Both approaches aid mutually to the breath and depth of knowledge and understanding for faculty and students.

Many of the concepts of accelerated learning are not new. Some teachers have utilized strategies such as visualization and positive affirmation for many years. As we continue to gain significant insight and knowledge about neuroscience, cognitive development and, information processing, the use of accelerated learning, when structured appropriately, has the potential of being a powerful delivery tool in the learning process.

Recommendations

The terminology "accelerated learning" can often be misleading. This is especially true when reviewing the literature and research. Accelerated learning has found applications not only in the sphere of education, but also in the military (Holden, 1987), corporate world and, field of industry. As for-profit organizations administer accelerated learning courses and workshops for corporate executives and other clients during training sessions, it becomes apparent that we must proceed carefully as not to misrepresent the founding

goals, objectives and motives. The literature, while researching accelerated learning, occasionally contained vocabulary such as "super learning" which, to the layperson may be disingenuous. Such terminology was often found as advertising for commercial offers to provide accelerating learning types of services. Commercialization of accelerated learning creates an environment that can easily distort the legitimacy and professional integrity for practitioners. Considering the preceding discussion and conclusions, the following recommendations are made:

1. Practitioners should utilize literature from professional organizations such as the Society of Accelerated Learning and Teaching (SALT) and, contributions available in periodicals such as The Journal for Accelerated Learning and Teaching.

2. Expand the body of research in the field of accelerated learning. Additional research is needed in order to properly assess fundamental approaches to methods in relation to our continued enlightenment of neuroscience and genetic development. Understanding the complexities of the brain and how methods of cognition affect the learning process will continue to provide a richer comprehension for how educators can help individuals have life-long learning experiences. Educators must work cooperatively with scientists and others so that relevant advances in the physical sciences can be applied appropriately to educational research and development. Additionally, more can be learned about accelerated learning by observation and active participation in the classroom. Incentives that promote applications for

accelerated learning, use of psychological type, multiple intelligences, and others are needed to positively affect the educational needs of learners.

3. Finally, educators should regularly assess their delivery system of knowledge to the student population. The process of developing curriculum and designing methods of instruction need not take place in a vacuum. Involving students, parents, community members, scientists, psychologists and the like, will promote a richer understanding of the variables that impact the learning process. Educators must not loose sight of their purpose, to educate and stimulate intrinsic desire to acquire knowledge. What are the needs of the students? Does the pedagogic approach meet the needs of diverse learning styles in the classroom? How can connections and relationships be formed that will enable students to retain relevant information to develop tangible knowledge? What can be learned from the student? What societal changes have affected the learning environment and what efforts should be adapted to address those changes? Answering these questions and others can provide critical assessment of our pedagogical approach and, metacognition for the educator as well.

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