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Visualizing Social Studies

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Introduction

For hundreds of years, people have been fascinated by the concept of intelligence and human learning (Gardner, 1999). The traditional view of intelligence was that every person processes information and learns the same way. Throughout the twentieth century, research on intelligence and learning revealed that there are many individual differences in the way people learn. Educators began to realize that not all students receive and process information in the same manner. This concept of different styles of learning became an important issue in the field of education (Felder, 1996). Two prominent styles of processing and learning, visual-spatial and auditory-sequential, were researched in depth. It became clear through these studies that while a majority of students process information best when it is presented visually, most classroom instruction catered mostly to auditory learners. As the result of these findings, teachers began to differentiate instruction in order to effectively reach all students. Methods of teaching to visual learners became of particular importance to teachers across all content areas, including those in social studies.

Purpose

The purpose of this thesis is to determine the benefits of incorporating visual learning methods into high school social studies curricula through a thorough examination of the history of the study of intelligence and learning, focusing on several studies that made significant contributions. From my personal experience throughout school, I have observed that many of my peers appear to be visual learners. While I myself am an auditory learner, I believe that, due to the large amount of visual stimulation students are exposed to in American society,

most students respond best to visual styles of teaching. This thesis will investigate past and current research on the topic and draw conclusions about the pertinence of incorporating visual learning techniques into the classroom based on that research.

In order to be aware of current research on learning styles, it is imperative to have an understanding of past research on intelligence and learning that led to a focus on learning styles. The first of many important studies that will be examined in the review of literature is the work of Alfred Binet and Theodore Simon in creating the first formal intelligence test and emphasizing individual differences in information processing and intelligence. Benjamin Bloom took the emphasis on various types of learning a step further with his creation of his taxonomy of learning dimensions, which will be examined as well. The literature review will move on to investigate Howard Gardner's theory of multiple intelligences, and then narrow the focus on assessments of personality and learning. This will be done by researching the Myers-Briggs Type Indicator Assessment, David Kolb's Learning Style Theory, and the Felder-Silverman Learning Style Model. Finally, two prominent styles of learning, visual-spatial and auditory-sequential, will be explained, ultimately focusing on the importance of differentiating instruction to meet the needs of individuals with all learning styles.

Literature Review

Binet-Simon Scale

A great amount of research was conducted throughout the twentieth century on intelligence and learning. Through these studies, experts began to realize the prevalence of individual differences in information processing and learning styles, visual and auditory in

particular. The first of this groundbreaking research began in the year 1904. At that time, a movement in France was beginning to aid in the education of children deemed retarded (Binet & Simon, 1905). France had passed a law requiring that all school-aged children attend school. This created problems within the education system, as certain children experienced extreme difficulties functioning and learning within a normal classroom. It became clear that certain children were in need of specialized assistance, perhaps even an alternative form of education than that provided to the general public. A professional group for child psychology, called La Société Libre pour l'Etude Psychologique de l'Enfant, was asked by the government to form a commission with the task of establishing a system of education for retarded children (Plucker, 2007). The commission was assigned the task of admissions conditions, which teachers to employ, and the pedagogical methods to be utilized. The commission made the decision that no child be held from the ordinary school and sent to a special school without first being tested. Such an examination was to be both pedagogical and medical in nature (Binet & Simon, 1905). If the results of the examination indicated that a child would be unable to benefit from instruction within a normal school, then they would be enrolled in a special school. The commission then faced the challenging task of developing such an examination. A formal intelligence test of any sort was yet to be created. Alfred Binet, a psychologist and member of the commission, was asked by the French Ministry of Education to devise the first intelligence test (Plucker, 2007).

Binet and his colleague, Theodore Simon, worked together to develop the examination. They first needed to determine which methods to utilize, questions to ask, and how a child should ultimately be compared with normal children (Binet & Simon, 1905). They developed

what is now known as the "Binet-Simon scale," consisting of a variety of tasks that were considered representative of children at various ages. They came up with the tasks after spending a great deal of time observing children in their natural environments (Fancher, 1985). The entire scale was made up of thirty tasks. The scale ranged from tasks of least complexity to the most complex. Some of the simpler items included following a lighted match with one's eyes or shaking hands. Other tasks included repeating back a series of three digits, defining basic words like "fork," or reproducing drawings they had seen previously. They tested their scale on fifty children, with ten children in each of the five age groups. The children who participated in this study were deemed average by their school teachers. Upon doing this, they were able to determine what tasks average children from each age group were able to complete. The Binet-Simon scale was ultimately used to determine the "mental age" of various children, thus identifying children who had a significantly younger mental age than their actual age. Such children were determined to be in need of special assistance (Plucker, 2007).

One thing that struck Binet and Simon while administering their test with various children was the different manner in which children processed incoming information (Binet & Simon, 1905). For instance, some children completed tasks more easily and quickly when they were presented orally. Others responded best to directions when they were shown what to do, or given pictures and diagrams. Children of similar abilities did not always process incoming information in the same manner. Binet himself was a firm believer in the fact that there exists a significant amount of diversity in intelligence and learning. Binet stated that children not only progress at different rates in their learning, but process directions and information differently. His study reconfirmed these beliefs. He was also aware of the limitations of his scale. Binet

emphasized the importance of both quantitative and qualitative measures of intelligence in order to account for a wide range of factors, including a child's environment. His belief in individual differences and the fact that not all children learn in the same manner set the stage for later research in the field of intelligence and styles of learning.

Bloom's Taxonomy

The feats of Binet and Simon in creating their learning scale highlighted the prevalence of individual differences in learning and information processing. Not all children responded to directions in the same manner: some responded better to visual cues, while others responded best to verbal directions. The variety of tasks they encompassed in the overall concept of "intelligence" also revealed that there are various types of intelligence (Fancher, 1985). Binet and Simon's observations about individual differences were not emphasized in education in the years following their work. Instead, education placed an increased focus on the concept of an intelligence quotient (IQ) and overall academic achievement in education. The cognitive processes of learning were essential. Little was done to emphasize various types of learning until the development of Bloom's taxonomy in 1956. At this time, psychologist Benjamin Bloom and his colleagues set out to classify overall goals for student performance (Coffey, n.d.). The intention of this classification method was to focus not just on the cognitive aspect of learning. Thus, Bloom and his colleagues established three major learning domains: cognitive, affective, and psychomotor. The cognitive domain relates to information processing and measurement. The affective domain refers to attitudes and feelings resulting from the learning process, and the final domain, psychomotor, includes physical and manipulative skills.

Bloom's taxonomy contains six categories of intellectual development (Wineburg & Schneider, 2009). The first step focuses on the knowledge acquisition, whether in the form of recall, memorization, or repetition. Next is comprehension, followed by application and then analysis. The fifth step is synthesis, which requires students to defend or argue their own opinions on the information acquired. The final step in Bloom's taxonomy is evaluation.

This classification quickly became popular with educators. It was straight-forward and easy to remember, and also allowed them to assess their students' learning outcomes on multiple levels (Coffey, n.d.). It has been met with criticism, however (Wineburg & Schneider, 2009). Some critics of Bloom's taxonomy say that it deemphasizes fundamental knowledge in place of higher order processes. Another criticism is that it still does not entirely account for multiple forms of intelligence and learning styles. The creators of the taxonomy had the intention of emphasizing all three of the learning domains, but in actuality, Bloom's taxonomy only addresses the intellectual skill development that occurs in the cognitive domain (Coffey). Nevertheless, the creation of this classification system did move the educational field forward to gaining a better understanding the complexity of intelligence and the need for a variety of teaching strategies in the classroom.

Howard Gardner's Theory of Multiple Intelligences

The intention behind Bloom's Taxonomy was to emphasize three dimensions of learning, but in reality, the focus remained on cognitive functioning. During the 1970s, however, the traditional concept of intelligence began to be disputed by new research (Lagowski, 1999). For years, intelligence was viewed as fixed and unchanging, primarily genetic, measurable by standardized examinations, and ultimately consisting of one's ability in logic and

language (Gardner, 1999). Further, according to the traditional view, everyone can learn in the same manner. When neuropsychologist Howard Gardner began his research on intelligence, these views began to change. Gardner believed that schools should not merely emphasize logical-mathematical components of learning. Rather, teachers should be aware of the wide variety of skills students possess that contribute to their overall intelligence, and approach topics in multiple ways to suit all learners. Howard Gardner proposed his theory of multiple intelligences in 1983. The multiple intelligences that found all individuals have, to varying degrees, are: logical-mathematical, spatial, linguistic, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalistic. To Gardner, intelligence was not a single ability, but the combination of multiple abilities to be developed through schooling.

After Gardner's research became increasingly accepted, other researchers suggested alternative theories. Learning style theory came increasingly into prominence during the 1980's, primarily through the work of cognitive psychologists. Large numbers of students began to take learning style assessments in school (Felder, 2010). Such assessments were based off of a model that was actually created years before, in 1962, as an assessment of personality type. This model was known as the Myers-Briggs Type Indicator assessment, and set the stage for the creation of a variety of other assessments of individual traits in the future.

Myers-Briggs Type Indicator Assessment

Isabel Myers-Briggs and Katharine Briggs were advocates of Carl Jung's theory of different personality types (Richardson & Arker, 2010). They wanted to put his theory to practical use. They began the long process of developing an instrument to identify different personalities during World War II in hopes of aiding those seeking work for the first time by

providing them with a better understanding of which occupation would suit them best (Leonard & Straus, 1997). The instrument they ultimately created became known as the Myers-Briggs Type Indicator. It utilized four pairs of traits, ultimately creating sixteen different personality types. One pair of traits included in the assessment was introversion versus extroversion, or outward-turning versus inward-turning. The second was sensing versus intuition, which refers to whether one focuses on the sensory information they take in or less direct perceptions. The next pair was thinking versus feeling, and the final was judging versus perceiving.

The Myers-Briggs Type Indicator became a widely used tool from its development in 1956. In 1994, it was determined that over two and a half million individuals worldwide had taken the personality assessment (Leonard & Straus, 1997). It has been used for a number of purposes. Employers find that it helps them better understand their employees, and also improves interrelations among co-workers. It has been used by psychologists to gain a firmer grasp on various aspects of an individual's personality. And teachers can utilize the MBTI to better assess the learning styles of their students (Brightman, n.d.). Knowing whether a student is sensing or intuitive, or whether they are more of a thinker rather than a feeler can help explain learning patterns and responses to teacher instruction. The Myers-Briggs Type Indicator spurred other researchers on to develop individual assessments with greater focuses on styles of learning.

David Kolb's Learning Style Theory

Myers and Briggs emphasized individual differences in personality in much the same manner that Binet and Simon emphasized variations in intelligence, or Benjamin Bloom and Howard Gardner believed in multiple dimensions of learning. In the 1980's, learning style

theory came to greater prominence (Felder, 2010). Educators desired to learn more about the various ways in which their students learned in the same way that they were discovering about differences in their personalities. This led many researchers to develop learning style theories. All of the theories overlapped in certain aspects, but there were obvious differences as well. One of the prominent learning styles theories was published by David Kolb in 1984 (Raschick et. al, 1998). Kolb's model is based on experiential learning, or making meaning from direct experience. In other words, Kolb believes that children learn best by doing. His model of learning consists of four elements. The first is a concrete experience, which is followed by a reflective observation of the experience. The reflective observation leads to an abstract conceptualization, or the formation of a new concept. The final step is active experimentation, in which the learner applies the new concept to their world. Based on this four-stage cycle, Kolb developed his learning style theory.

According to Kolb, all people naturally prefer a certain learning style. Their preference is determined by several factors, including their social environment, their basic cognitive processing, and their educational experiences. Regardless of the factors contributing to their preference, the preference itself results from two separate choices that one makes. One choice is between a concrete experience and an abstract conceptualization (Raschick et. al, 1998). A concrete experience is considered feeling, while an abstract conceptualization is thinking. The second choice is between active experimentation and reflective observation. In other words, one prefers to either do something or watch something. An individual's learning style is a product of these two decisions. One may have a diverging learning style, which is a combination of feeling and watching. Another learning style is assimilating, in which an

individual prefers to watch and think. The converging learning style involves doing and thinking, while the accommodating learning style relies on doing and feeling. Kolb's model has become one of the most widely used learning style models in psychology, business, and education. It helped teachers, in particular, gain a better grasp on how different children learn best. Such understanding increased with the development of arguably the most well-known and widely used learning style theory, the Felder-Silverman Learning Style Model.

The Felder-Silverman Learning Style Model

The Felder-Silverman Learning Style Model was developed and published in 1988 (Graf et. al, n.d.). The Felder-Silverman model originally focused on five aspects of learning, but one of the categories was removed soon after. One category is whether a learner is active or reflective (Felder & Soloman, n.d.). An active learner understands information best by doing something active with it, whether through discussion or explanation. Reflective learners, on the other hand, like to think about information quietly first. The second focus is on sensing versus intuitive learning. Sensors are those who enjoy learning facts and practical application. Intuitive learners prefer innovation, abstractions, and discovering new possibilities. The next pair is visual versus verbal learning. Visual learners are those who remember information the best when they see it. Verbal learners, sometimes called auditory learners, get more out of written and spoken explanations of information. The last pair is sequential or global learning. Sequential learners gain information in linear steps, whereas global learners take in information more randomly. Felder and Silverman's model has ultimately led educators to focus on two types of information reception in learning: visual and auditory, also known as verbal (Felder, 1996).

visual-spatial learning.

In order to understand why teachers find it essential to differentiate instruction to accommodate both types of learners, it is necessary to have a clear grasp of the similarities and differences between the two. Visual learners are individuals who think in pictures rather than words (Silverman, 2011). Visual learning is often called "visual-spatial learning" in order to encompass more qualities of this particular style of learning. Visual-spatial learners relate well to space. Because of this, they tend to be whole-part learners. In other words, they learn best when they have an understanding of the big picture before specific details. When visual-spatial learners gain an understanding of incoming information, it is stored permanently in their brains. Repetition does not benefit visual learners.

Visual-spatial learners do not respond well to step-by-step instruction. Thus, when they are required to "show their work," they tend to struggle. For example, in a mathematics course, visual-spatial learners are able to arrive at the correct answer if they understand the problem, but showing their work in a step-by-step manner proves challenging. Thus, they often excel in math reasoning and have a harder time with math computation (Silverman, 2011).

Visual-spatial learners are good at reading maps. They tend to enjoy completing puzzles, playing games like Chess, designing scientific experiments, and programming computers. Visual-spatial learners are dramatic, creative, artistic, and musical. They learn foreign languages best through immersion rather than repetition. They are also often emotionally intelligent, and hypersensitive to their environment (Freed & Silverman, 1994).

Visual-spatial learners often have uneven grades. This is likely due to the fact that they do not respond well to the instruction of many of their teachers. Instruction with an emphasis

on repetition and the knowledge of details is frustrating for visual-spatial learners. Lectures also are a struggle for visual-spatial learners.

auditory-sequential learning.

Auditory-sequential learners differ from visual learners in many ways. Auditory learners are those who learn best through words, either spoken or written (Silverman, 2011). These individuals process information best when it is presented in a step-by-step manner. The optimal way for these learners to receive information is sequentially, from easy to difficult. They are analytical and tend to respond well to details. Auditory-sequential learners retain information through repetition and drill.

Auditory-sequential learners follow oral directions well (Silverman, 2011). They are well-organized, write quickly and neatly, and respond well to details. They excel at arithmetic, spelling, and memorizing facts. They may not, however, remember information well in the long term without a certain amount of repetition. They enjoy algebra and chemistry, but struggle with geometry and physics.

Auditory-sequential learners are academically talented overall. The instruction in most classes tends to cater well to their learning needs. Thus, they often achieve high grades and tend to view school as a positive experience in general.

The Montessori Program

With a background in the two main styles of learning, one can explore research describing methods of differentiating instruction to meet the needs of diverse learners. Many years before learning styles were researched, there was an Italian woman who was far ahead of her times in realizing the diversity that exists among learners (Seldin, 2010). Maria Montessori,

both a psychiatrist and scholar in the educational field, began working with a group of impoverished children in Rome in the year 1907. At that time, she began to realize the potential of all children, when provided a nurturing environment in which to learn and grow.

Dr. Montessori set out to develop an educational program for children. She incorporated the curriculum that was required by Italy at the time, but adapted the methods of teaching from being teacher-centered to student-centered (Montessori Index, n.d.). Children were provided with ample materials and allowed to research their environment, exploring their own individual interests. Montessori emphasized the importance of adapting the classroom environment continually and differently for each child. She used materials to enhance various styles of learning. Manipulatives, puzzles, books, and a plethora of other toys were used in her classrooms.

Montessori's methods were criticized by some who found them to be too progressive and student-centered. Despite the criticism her method faced, however, Montessori's program continually produced high levels of achievement, and have been utilized by educators ever since. Her emphasis on individual differences showed a movement away from paper-pencil and rote methods of teaching. She was a model of how to differentiate instruction in order to foster the learning of children with different skills and styles of learning. It was a task that proved challenging for her. Decades later, teachers still struggled to reach their students in order to help them succeed to the best of their ability (Felder & Silverman, 1988). This is what provoked Richard M. Felder and Linda K. Silverman to research engineering students at the college level in order to better understand learning.

Felder and Silverman's Research on the Learning Styles of Engineering Students

Richard M. Felder, a professor from the department of chemical engineering at North Carolina State University, has conducted a great amount of research on learning styles. He is the co-developer of the Felder-Silverman model, and since that time has written extensively on student-centered approaches to learning with an emphasis on learning styles (Felder, 2010). Due to his position as an engineering professor, much of his research has been on university engineering students. Felder states in his research that he observed a disconnect in the common learning styles of engineering students and the traditional teaching methods of their professors (Felder & Silverman, 1988). Such a mismatch increases boredom and decreases performance on examinations. Professors are daunted by such low performances and seek to find a cause, often placing the blame solely on the students. Felder, along with Linda K. Silverman, sought to eradicate this problem by creating a learning-style model, aimed to analyze which learning styles were most prominent among engineering students. He was ultimately seeking to reach all students who are not reached by the normal method of engineering instruction. Felder and Silverman built off of previous educational and psychological theories, such as Carl Jung's personality theory, the Myers-Briggs Type Indicator, and Kolb's learning style theory, to create their own model. After developing their model, they conducted research to determine what style of learners engineering students tended to be in comparison to the style in which engineering courses are typically taught.

Felder and Silverman found that a majority of the engineering students they studied were sensors—those who prefer memorizing facts and receiving practical applications of such facts (Felder & Silverman, 1988). In contrast, most professors were found to be intuitors,

leading them to teach their courses in an intuitive fashion. This is an example of a mismatch that Felder found while observing university engineering classes. Felder and Silverman suggested that courses be taught in such a way to reach both intuitors and sensors, not intuitors alone. This would include a blend of concrete information with abstract concepts. In so doing, overall student performance would likely improve.

Felder and Silverman emphasized two different ways that people receive information. One category was visually, which as mentioned earlier means they most effectively receive information through sights, pictures, and diagrams. The second category was auditory learning, which includes sounds and words. Felder and Silverman referred to a significant amount of research concluding that the majority of people learn most effectively using one of the two categories, tending to miss or ignore the other (Felder & Silverman, 1988). This is why an individual is generally classified as either a visual or auditory learner. Their research went on to show that the majority of college-aged students, including engineering students, were visual learners. This, however, is not how they received the bulk of their classroom instruction. Instead, most professors tended to present content verbally, appealing to the auditory learners in the group. The majority of engineering classes were conducted in lecture format, which proved troublesome to those students who received and processed information best when it was presented visually. Professors who were able to present information using a combination of visual and auditory techniques reinforced learning for many more students than otherwise. In other words, utilizing a variety of diagrams, charts, and live demonstrations as well as lecturing would meet the diverse needs of learners.

Felder and Silverman's study was important in highlighting the discrepancies between the needs of students and the teaching of instructors. Their research caused a movement in the administration of learning style assessments, and a student-centered approach to instruction has been increasingly emphasized since the 1980s (Felder, 2010). Felder and Silverman's research led to the focus on two specific types of learning, visual and auditory (Silverman, 2000). This research has raised the curiosity of many students and adults alike as to what type of a learner they are. It has also led educators to look closely at their methods of instruction to determine ways in which they could better teach the variety of learners found in their classrooms.

Silverman's recent research.

Contemporary researchers have sought to answer certain important questions. Are most college-aged students today still visual learners? What about the general public as a whole? Specifically, what does contemporary research reveal about the prevalence of the two learning styles in K-12 education today? The research of Felder and Silverman, as well as many others, led to an emphasis on differentiation in education (Silverman, 2000). Teachers began to learn more about their own personal learning style and teaching style, as well as how to vary their instruction to meet the needs of all students. This emphasis on differentiation, however, can lead some teachers to feel overwhelmed. Thus, it is necessary for educators to focus on utilizing specific methods that will benefit the most learners at once.

After Felder and Silverman's original research in the 1980s, the education field began to focus specifically on visual-spatial and auditory-sequential styles of learning. Visual-spatial learners tend to utilize more of the right hemisphere function in the brain, while auditory-

sequential learners utilize more of the left hemisphere (Silverman, 2011). Research in the 1990s revealed that auditory-sequential learners, who learned best by listening, had an overall positive experience in school. Visual-spatial learners, on the other hand, experienced more frustration with school. This was due to the fact that these students received instruction in a manner that was not optimal for their brain processing.

The Gifted Development Center, based in Colorado and founded by Linda K. Silverman, sought to aid such visual-spatial learners, as she found that many exceptionally bright individuals tended to be visual-spatial learners themselves. In 2002, the Gifted Development Center released a publication including a variety of strategies for working effectively with children who learn best through visual strategies. A team of experts also created a visual-spatial identifier, which is a fifteen item tool used to determine which kind of learner a child is. After creating the visual-spatial identifier, 750 fifth and sixth graders from a wide range of ethnic and socio-economic backgrounds used the tool (Visual-Spatial Resources, 2004). The study revealed that one-third of the children studied were strongly visual-spatial. One-fifth was strongly auditory-sequential. The remaining forty-one percent of students relied on both hemispheres, but thirty percent of those showed a slight preference for the visual-spatial learning style. This research study indicates that over sixty percent of students in a regular classroom learn best when provided with visual-spatial presentations of information.

Many other research studies have been conducted in attempts to discover what style of learning prevails. There is a clear consensus among studies that a majority of students in a general education classroom are visual learners (Vaskos, n.d.). Exact percentages vary between studies, but are thought to indicate that somewhere between sixty and sixty-five percent of

people are visual learners. One particular study conducted by a group of researchers revealed that eighty-seven percent of the subjects were visual learners (Graf et. al, n.d.). As today's children are now more than ever exposed to a society that emphasizes visual stimulation, it appears that the prominence of visual learners increases as time passes. Such statistics indicate that in order to be effective, it is vital that instructors utilize strategies that reach such a majority in order to prevent them from becoming discouraged and disinterested in the classroom. There is also increased pressure on teachers to prepare their students for an increasingly technological world that requires individuals to be visually literate in order to be successful (McLester, 2006). How, then, can educators best incorporate visual learning strategies into the classroom? And more specifically, how can secondary social studies teachers successfully reach visual learners with their instruction?

Incorporating Visual Learning Strategies into Secondary Social Studies Curriculum

Current research clearly indicates that a majority of students at all levels of education are visual learners. Despite this, however, most teachers at the high school and college level, in particular, use a minimal amount of visual learning techniques (Felder & Brent, 2005). Older students are typically expected to listen to lectures and copy notes from a chalkboard or overhead. Such teaching methods are not beneficial for many students. Researchers have increasingly begun to emphasize the importance of expanding instruction to encompass a wide range of techniques that aid multiple styles of learning. This means going beyond traditional teaching strategies in order to effectively reach all learners.

Social studies at the secondary level traditionally has been taught primarily through lecture format, with a heavy emphasis on the use of a text book (Tindall, 1996). World history,

American history, and American government teachers alike would present information in lecture format, emphasizing the memorization of names, dates, places, and events in order to recall them on an examination. Textbooks are widely used, as they present a basic guide for teacher instruction. They are organized in a manner that is sequential and easy for teachers to follow when designing their lessons.

Textbooks have their problems, however. Many textbooks are found to be redundant, uninteresting for many students, and ineffective in providing a great deal of new information for students (Larkins & Hawkins, 1990). Additionally, requiring students to read from a textbook encourages passivity. Students find little stimulation from textbook work, leading to an increase in disinterest in social studies courses. Textbooks emphasize the memorization of facts and basic information, but typically do not encourage students to attain higher order thinking skills (Tindall, 1996). Students who struggle to comprehend written material will not gain the knowledge necessary to succeed in the course simply by reading a text book.

Lectures have their shortcomings as well (Bligh, 2000). Lectures, while beneficial to present basic information, are ineffective in inspiring interest and promoting critical thinking. Lectures, like text book reading, do not allow students to actively engage with content. They instead encourage rote memorization of facts, which are often quickly forgotten after an examination. Lectures are particularly ineffective for visual learners, as they learn best by seeing, not by hearing.

As research emerged about the prevalence of various learning styles in the classroom, social studies teachers began to become more aware of a need to diversify their instruction in order to benefit their students (Vaskos, n.d.). Teachers did not entirely abandon traditional

teaching methods, but began to utilize other strategies as well (Bintner, 1978). Incorporating a variety of teaching strategies to present information in a social studies classroom engages all types of learners (Christenbury, 2010). And since a majority of learners in the classroom today are visual learners, it is of particular importance that teachers utilize methods that will allow visual learners to grasp new information and meet their learning goals (Ball & Forzani, 2010).

What strategies work well to reach visual learners in social studies classrooms? One strategy that social studies teachers have found to be effective is to make lectures more stimulating for the visual learner (Vaskos, n.d.). This can be done using several strategies. Power Point presentations allow students to view information visually. Power Point presentations can become even more visually appealing with the use of maps, pictures, or charts that supplement the information provided. Teachers have also found it beneficial to pass out copies of class notes to students before class begins. This eliminates the amount of notes that students need to take, and allows them to view the content and add words, pictures, or anything else to the notes that aid their understanding (Bligh, 2000). Other aids can be incorporated into lectures as well. These may include mnemonic devices, charts, timelines, flip boards, and photographs. All of these devices give students the chance to visually receive information in addition to the verbal presentation of the instructor (Felder, 1996).

Social studies teachers have also found that projects are an excellent way for students to gain a greater understanding of information (Vaskos, n.d.). Projects also allow students ownership over their work, and stimulate creativity. Projects can be used in any social studies class, whether history, government, geography, psychology, sociology, or economics. Projects can be done individually or in groups. They can come in the form of making a movie, building a

structure, writing a skit, or making a travel brochure. There are numerous possibilities, and allow students of all different learning styles to learn and present learned information in a manner unique to them.

Many social studies instructors find benefit in showing films in their classrooms (Gaudelli, 2009). The digital natives in today's classrooms have come to expect their teachers to incorporate technology into their classes. Films can be very effective in visually presenting information to students, as long as they present quality material. Thus, it is imperative that teachers view films prior to showing them in their classrooms in order to determine whether they are beneficial or not. Whether it is "Schindler's List" during a Holocaust unit, or "To Kill a Mockingbird" during a Civil Rights unit, today's students enjoy watching movies, and can learn a lot from watching them at the same time. Other forms of technology can and should be utilized in social studies classrooms as well. CD-ROMs and computer programs can supplement classroom material and give students greater visual exposure (Vaskos). Students can also use computers to create concept maps and graphic organizers. They can conduct research or read about current events on the Internet. Many social studies teachers have their students create blogs or websites, writing about material they are learning in class. The more students can utilize technology in today's society, the better. They must be familiar with various technological outlets in order to thrive in today's digital world (Gaudelli, 2009).

Other basic strategies employed by secondary social studies teachers have proved successful in reaching visual-spatial learners. Teachers note that writing down important instructions in the chalk board in addition to giving them verbally helps meet the needs of both types of learners (Freed & Silverman, 1994). Emphasizing concepts, not simply dates and

names, allows visual-spatial learners to find greater success in social studies courses. Allowing students opportunities to problem solve is another excellent way to foster the strengths of visual learners, since they are whole-part learners (Silverman, n.d.). Teachers have also found benefit in providing students with the opportunity to engage in service learning projects. These are not only beneficial to them in gaining real world experience, but it allows them to realize how their learning has moral, ethical, and global implications. Visual-spatial learners thrive in service learning situations, particularly when they are able to engage in hands-on activities.

It is crucial that teaching methods that cater to visual learners are utilized by educators today. When visual learners are provided instruction that better suits their style of learning, they consistently show higher academic achievement (Visual-Spatial Resources, 2004). There is a large percentage of visual learners who are highly intelligent, and can find great academic success if instructed properly. Additionally, differentiating instruction benefits all students, because using a variety of techniques boosts student interest.

Discussion

Research in the study of intelligence and learning advanced significantly throughout the 20th century, and continues to do so in recent years. Alfred Binet and Theodore Simon set the stage for research on individual differences in intelligence and learning, which led to a focus on learning styles in the 1980s. Since that time, the field of education has taken a special interest in visual-spatial and auditory-sequential styles of learning. When experts like Richard Felder and Linda K. Silverman began to recognize the neglect of educators to instruct in a manner that benefits the majority of students, a shift in education occurred. Instruction began to focus

more on the needs of individual students. Numerous studies revealed that a majority of children and youth are visual learners, yet instruction was designed in such a way to benefit auditory learners the most. Because of this, teachers began to look for ways to visually stimulate their students.

There is some research that has measured improved student outcomes regarding higher academic performance when teachers have utilized visual techniques (Visual-Spatial Resources, 2004). I would suggest that researchers could explore these student outcomes in greater depth. There is a significant amount of research indicating that teachers should use these methods to benefit their students, but not nearly as much research specifying what those benefits are. The educational field would benefit greatly from understanding just how visual learning methods help students succeed in school and in their future endeavors, in order to help teachers continually adapt their instruction better meet the needs of their students.

Having an understanding of learning styles is an important tool that every teacher should possess. It allows one to relate to individual students, and expand instruction to reach a larger audience. Teachers are placed under pressure to have their students grow and succeed, and employing a variety of strategies to reach students with different learning styles is a way to aid in the overall growth process of students. Those working in the educational field must be aware of various strategies that benefit all learners, particularly visual learners, in order to allow all students the opportunity to excel academically.

Having an awareness of one's own learning style is beneficial. If children are aware of how they learn best from a young age, they are better able to receive the help they need from their teachers and their parents. It also gives one a greater understanding of themselves and

why they think and respond to information the way they do. It can help explain to a visual learner why they become frustrated when they cannot seem to remember the instructions their parents or teachers give them. It can help an auditory learner understand why they find it necessary to repeat information many times, while their visual learner friends remember it after just one time. Having a greater self-awareness allows people to succeed in all areas of life: in relationships, school, and the work place.

Research on learning styles is of particular importance to me as a future educator. As I enter the educational field, I face numerous challenges. Perhaps the greatest of all of these challenges is designing my classroom instruction in such a way that I can meet the needs of a diverse group of learners. I cannot teach in the same manner every day and expect all of my students to do well. I must be willing to diversify my instruction in order to reach students who are visual and auditory learners alike. I also must be willing to try new methods that are uncomfortable or unfamiliar to me if it ultimately means that they will allow my students deeper learning. Conducting this research has shown me that I must continue to be aware of contemporary research on learning styles and methods of teaching so that I will remain relevant to my students. I desire to become the most effective teacher that I can possibly be which is why this research is invaluable to me as I move into my profession. I will do my best to reach visual learners in my classroom, utilizing the techniques that I have learned from this research.

The aim of this research was to examine the history of the study of intelligence and learning in depth, ultimately leading to research on various styles of learning. From that research, I was able to determine the benefits of incorporating visual learning methods into

high school social studies curriculum. Visual learners make up a majority of students in classrooms today. Thus, it is vital that educators implement instructional strategies that meet the needs of visual learners. In so doing, visual learning students will experience greater academic success and achieve a favorable educational experience.

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