The Implications of Learning Style Models

To School Counseling:
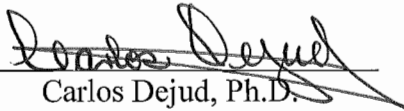
A Review of the Literature

by

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ABSTRACT

A review of the literature was conducted in order to address the use of learning style models in regards to the school counseling profession. Questions concerning the usefulness, effectiveness and practicality of learning style models were discussed. A critical analysis of the literature revealed that there is a lack of empirical evidence for most learning style models. Dunn and Dunn's (1978) learning style model appears to be the most effective and practical for school counselors to administer in conjunction with Shirley Griggs (1991) learning-style counseling model.

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Chapter I: Introduction

Art Carey, the author of *The United States of Incompetence* (1991), stated in his book that in 1983 the United States Department of Education declared that America was a "nation at risk". Carey went on to report on the dismal state of education in this country, and warned that the foundations of our society were being eroded by "a rising tide of mediocrity that threatens our very future as a nation and a people." He goes on to state that in an effort to remedy this major issue the U.S. pumped billions of dollars (185 billion dollar increase in 1985) into programs, teacher salaries, and toughening graduation requirements throughout the rest of the decade, but to little avail. In 1990, findings from a report by the U.S. Department of Education came out and again said that our students' overall reading and writing skills, as well as our national student drop-out rate, were unchanged and were going to get worse over the years to come. However, a decade would pass before an effort would be made to seriously address these concerns again.

In 2001, the United States congress passed the No Child Left Behind Act (NCLB) to tackle some of the major issues facing our students' academic success rates and our country's overall lack of competitiveness in the world. President Bush justified NCLB in these words: "Too many children in America are segregated by low expectations, illiteracy, and self doubt. In a consistently changing world that is demanding increasingly complex skills from its work force, children are literally being left behind" (cited in Turnbull, Turnbull & Wehmeyer, 2007, p. 56). Although NCLB has brought a level of accountability to student success, the law has not been properly funded, thus forcing schools to do more with less. Educators have been forced to increase test scores and overall student achievement with relatively low funding and resources.

Other federal mandates followed NCLB. In 2004 and then revised in 2007, the Individuals with Disabilities Education Act (IDEA) facilitated the improvement of academic

success for students with disabilities. This stipulation allowed for increased government funding for students with physical, emotional and academic disadvantages, while emphasizing greater collaboration between parents, students and school staff. Although this was a major and important step towards helping students with disabilities and in turn our society as a whole, this again increased the demands on schools, teachers, and local governments to improve overall student success but without providing adequate funding.

Despite all this attention in the past decade on improving student success in the classroom, and owing to poor funding, the outcomes remain dismal. Compared to other developed countries, the Organization for Economic Co-operation and Development (OECD) stated in 2007 that the United States ranked among the bottom of developed countries in student graduation rates with only about 75% of our high school students graduating, as compared to the average graduation rate of 87% for European Union countries. Furthermore, on virtually every international assessment of academic proficiency, American secondary school students' performances ranged from mediocre to poor. Even within our borders, the United States still has substantial inequities in achievement, indicating among recent international surveys that the performance gap between the most and least proficient students in the United States is among the highest of all OECD countries (Kirsch, Braun, Yamamoto, & Sum, 2007). The gap between cultural groups is significant. In recent decades, White students are dropping out of high school at a rate of 2.8%, Hispanics at a rate of 5%, and Blacks at a rate of 7.3%, totaling an annual drop out rate at approximately 415,000 students, a number larger than the total population of the city of Minneapolis (Laird, Kienzl, DeBell & Chapman, 2007).

Consequently, since the outlook of the modern workforce has changed dramatically in recent years and the American public schools are failing to properly prepare all of our students

for the global market, countries like China and India are picking up the slack. With over a billion people, the numbers of Chinese 'honor' students alone outnumber our entire U.S. public school population. Currently, highly educated and skilled students from St. Paul are competing against students from Beijing and London. These facts, in combination with a shortage of trained American workers, result in a high influx of foreign nationals into hi-tech, medical, scientific, and educational fields. Given the current state of our education system, this has educators as well as politicians, deeply worried (Kirsch et al., 2007).

We know that the pressures to succeed, the need for collaboration, and the obstacles to overcome in the classroom have never been greater for teachers, parents, administrators, and especially students. The expectation of increased test scores has taken over classrooms and put pressure on not just mainstream students, but on students with disabilities and other learning barriers. Students with autism, cognitive disabilities, emotional and behavioral disorders, learning disabilities, etc, are all expected to perform at the same level of their peers on tests scores. The question is do we have the answers to solve these issues? The answer is a resounding "maybe." In an effort to come up with a good solution to all students who struggle academically, teachers, counselors, and administrators have begun to turn more and more towards individualized learning methods (Turnbull et al., 2007). Logic suggests that if a teacher understands how a student learns best, then the teacher can then tailor his or her teaching style to fit the student, and correspondingly increase student success, as well as raise test scores.

The theory of individual learning styles began roughly 40 years ago. Over the course of those years, learning style theory has been embraced by some and criticized by others. Researchers have been questioning the level of effectiveness, validity, reliability, and practicality of learning style models and assessments (Coffield, Moseley, Hall, & Ecclestone, 2004; Dunn &

Dunn, 1978; Raynor, 2007; Sugarman, 1985). In addition, there are over 70 different assessment models available for identifying learning styles. Many of these models have great commercial appeal but little empirical evidence to back up their findings, while others are seen as accurate, but limited in their pedagogical application. All of this uncertainty over learning style theory has led some researchers to conclude that learning style theory as a whole has little cohesion, limited direction, and minimal application to the classroom (Coffield et al., 2004; Raynor, 2007).

What does this all mean for educators and students? Common knowledge would suggest that individualizing student learning would benefit the student, the teacher, and in turn, society as a whole. Yet, with such little confidence in learning style modalities, what course should educators take, if any? More specifically, who is qualified, responsible, and in a unique position to address such issues within the traditional K-12 educational framework?

School counselors within the school system are in a unique position to apply the methods and assessments of learning styles with students. According to the American School Counselors Association (ASCA, 2004), counselors focus on improving student success in three main areas: 1) academic, 2) career, and 3) personal/social. This is done through teaching in-class lesson plans, leading individual and group therapy sessions, consulting with teachers and parents, and implementing other various programs and curricula. The primary role of the school counselor is to be an advocate for every student in the school. The school counselor is a bridge between the student, the teacher, and the parent. Consequently, in order to be an effective advocate for the students, especially for at-risk and minority students in the schools, school counselors should have a proficient understanding of how all their students learn best.

For example, a particular school in North Carolina focused on African-American academic improvement over the course of four years. The school implemented a learning style

program, directed and led by the school counselor, which addressed how the lowest academic achievers preferred to learn. The school had originally attained scores in the 30th percentile on the California Achievement Test of Basic Skills (CTBS). After only a year of the school-wide learning style program the achievement scores for all students rose to the 40th percentile. This was accomplished by teaching students about their learning style strengths, adjusting the environment to allow alternate lighting and seating, and focusing on tactile instructional methods. By the end of the second year the school was up to the 75th percentile, having implemented small group methods in reading and math during the afternoon hours. Finally, after four years of using the learning style model the school as a whole scored in the 85th percentile, with the African-American students scoring in the 70th percentile or better (Hurley, 1997).

As this school in North Carolina suggests, knowing and applying learning style models as a school-wide program could be an essential component in facilitating school-wide academic success. Assessing the implications of learning style models for school counselors would be a step in the direction towards bettering overall student success for minority and/or underachieving students and the entire school as a whole.

Statement of the Problem

Due to the current state of our country's educational system, the standards set by NCLB, the need for overall academic success for all students, and the unique role of school counselors as student advocate, it is necessary to conduct a review of the literature on learning style models and their implications for counselors in K-12 schools.

Purpose of the Study

The purpose of this literature review is to help school counselors better understand learning style models and how they can be used to improve the overall education of their students. This review will address current learning style models; assess what learning style model or models appear effective in improving student academic success; and uncover what role the school counselor plays in addressing student learning style preferences.

Questions to be Answered

The following is a list of questions to be addressed throughout this literature review: 1) What are the various models of learning styles and are they valid, reliable and relevant?, 2) Are learning style models effective and practical in an educational setting?, 3) If so, what is the role of a school counselor in regards to learning style models in the school setting?, and 4) What can school counselors do to encourage the use of learning style-focused curriculum, strategies, and assessments, if anything?

Definition of Terms

The following is a list of terms and their definitions employed throughout this paper: *Content-by-strategy interactions.* Instructional strategies based on the content of the subject material.

Learning-by-strategy interactions. Instructional strategies based on the learning preferences of the students.

Learning style. Learning styles are simply different approaches to or ways of learning.

Learning style counseling. Counseling administered with the awareness of learning preferences of all parties involved in the school setting.

Pedagogy. The art or science of teaching.

Assumptions

The following is a list of assumptions admitted by the author prior to discussion: 1) Educators are not capable of identifying a student's learning style (Pettigrew & Buell, 2001). 2) Students are hard-wired to learn in a certain way (Dunn & Dunn, 1978). 3) Classroom teachers are resistant to school-based consultation from fellow professionals (Gonzalez, Nelson, Gutkin, & Shwery, 2004). 4) The literature on learning styles is directionless; it does not appear to be united in a common direction or goal, and lacks empirical support (Coffield et al., 2004).

Limitations

The limitations of this study include, but are not restricted to the following: 1) the study is based entirely upon the review of the literature, and is not based upon interactions with students in the classroom, 2) learning style theories will not be tested in the classroom during this literature review. Therefore, empirically, the conclusions that may be drawn have not been proven, and 3) the learning style limitations of the author himself may hinder the outcome of this review. The author struggles with reading and writing, and is significantly more comfortable learning in a hands-on, interactive environment. For this reason, the author is personally invested in the outcome of this study and may inadvertently seek validation for his preferred learning style.

Chapter II: Literature Review

The review of the literature will address the following in regards to learning styles: definition of learning style; overview of learning style theory; descriptions of current theoretical models; critiques of those models; finding a model that is valid, reliable and effective for counselors to use; federal mandates relevant to learning style modalities; the unique role of the school counselor in relationship to learning style models; defining a comprehensive learning style model that works for counselors; and finally, questions to be answered in the discussion and analysis section.

What is Learning Style?

Simply put, learning style is our unique way of consistently responding to and processing information. Everyone has a learning style and everyone's learning style is slightly different, just like our fingerprints. Keefe (1979) defines learning styles as the "composite of characteristic cognitive, affective, and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to the learning environment." Common knowledge suggests that if our learning style is properly accommodated our attitude towards learning will improve along with an increase in productivity, academic success, and overall creativity.

It is important to note that learning styles are not set in stone. An individual's learning style may change numerous times over a lifetime. Learning styles should be seen as points along a scale and not as fixed characteristics. We should not pigeonhole people as either "visual" or "tactile" learners because we are all capable or learning under almost any style, no matter what our preference may be. Therefore, throughout this review I will commonly interchange the words "learning style" with "learning preference." The word preference suggests that the way we learn

is not fixed to one characteristic, but that we may "prefer" a certain learning style over another

learning style.

Learning Style Theory

For decades, researchers, educators, and theorists have questioned, "How can we teach

our students if we do not know how they learn?" The search for this answer led to the concept of

an individual "learning style" in the early 1970s. Some theorists at the time also began to use the

term "cognitive style." Cognitive style, defined by Raynor and Riding (1997), is an individual's

difference in cognition and perception and is commonly confused or used interchangeably with

the term "learning style." Yet most researchers would argue that the two terms are distinct,

though relevant to one another. Others in the field have called for this clarification to ease

confusion and to aid in the direction of further research (Raynor, 2007).

One of the first theoretical models to use the concept of individual learning style was

David Kolb's (1984) framework on experiential learning. Kolb's idea of experiential learning

stated that students and adults learn best through their personal experiences. From this idea, he

went on to build a model based on various ways people learn information, leading to the

development of an assessment of learning styles called the Learning Styles Inventory (LSI)

(Kolb, 1976). Since Kolb, there have been numerous other approaches or models developed in

relation to individual learning styles. Today, there are approximately 70 models addressing some

form of learning style theory (Coffield et al., 2004).

Learning Style Models

The vast material produced in recent decades on learning styles and their corresponding

models has gained the attention of many educators. Some state that teaching methods should be

based on individual student learning styles; a model they believe should be mainstreamed

(Sugarman, 1985). Today many educators are using various teaching methods based on their students' learning styles. In order to explain the various learning style models, we must first understand the theoretical bases of the models and some of the ways that they have been grouped and categorized.

Curry's (1987) "onion" model, as it is commonly referred to, offers a useful framework for grouping and explaining the numerous learning style models. Consisting of four layers (like an onion), the "onion" model emphasizes the notion of an individual person's psychology and seeks to explain the formation of individual learning behavior (Raynor & Riding, 1997). The model suggests that cognitive personality style is at the core of student learning. In other words, learning style traits are "fixed" from birth, are very stable, are difficult to change or modify, and are very important in advanced learning (Coffield et al., 2004). For example, a student who is understood to be a "visual" learner is viewed as cognitively "hard-wired" to learn best via visual stimuli such as graphs, diagrams, power point presentations, etc. For that reason, according to this model, such a student will struggle to learn any new information if it is presented in a dissimilar way (i.e. using an auditory or tactile technique). Those who subscribe to these idea of "fixed" learning styles suggest that educators must tailor their teaching style to meet the student's needs, and not visa versa (Gregorc, 1985).

Other learning style models that encompass the core layer of the "onion" model include Witkin's (1954) construct of field dependence/field independence and the Myers-Briggs Type Indicator (Myers, 1978). Witkin's model addresses the level of independence that a student prefers in processing information (1954). The Myers-Briggs Type Indicator model uses dichotomous scales that measure a person's level of extroversion versus introversion, sensing versus intuition, thinking versus feeling, and judging versus perception (1978).

The second layer of the onion is the information-processing layer. This is described as an individual's preferred cognitive approach in absorbing information. This layer is considered easier to modify than the inner layer because learning style is seen as a reflection of the core cognitive personality style, not the cognitive style itself. Kolb's (1984) model of information processing is an example of a model that fits into the information-processing layer of Curry's "onion" model.

The third layer consists of an individual's level of social interaction in the classroom. A model that represents this layer would be Reichmann and Grasha's (1974) types of learners (cited in Griggs, 1991, p. 3). This includes the concepts of independent versus dependent learning, collaborative versus competitive learning, and participant versus avoidant learning among students.

The fourth and final layer of Curry's onion model is entitled the multidimensional and instructional layer. This layer encompasses learning style models that are easier to modify and influence, unlike the core layer. This outer layer suggests that learning styles are not based on "fixed" traits, but on preferences in processing information and can be easily modified through the environment. Keefe's (1989) Human Information Processing Model and Dunn and Dunn's (1978) Learning Style Model fall into this category. These models stress the importance of identifying and addressing a student's individual differences in the classroom.

Critiques of Learning Style Models

According to Coffield et al. (2004), there is no best way to measure the accuracy and effectiveness of the various learning style models. Coffield (2004) recognizes that researchers agree upon the fact that individuals have a particular style or preference for learning, but argues that it is far more important to match a teacher's presentation with the nature of the subject

matter, (such as providing correct learning methods, strategies, and context), than matching individual preferences. For example, a study done by Marzano (1998) demonstrated that regardless of subject matter and/or student learning preferences, the use of large visuals and tactile lesson plans facilitated positive academic student outcomes.

What Marzano's (1998) research suggests is that students do not have a certain "style" of learning, but rather a preference of how they absorb information. If this is true, then teachers should not necessarily hold learning preferences first and foremost in formulating their lesson plans. Instead researchers like David Merrill (2000) suggest that teachers should base their instructional strategies on the content of the material first and foremost (content-by-strategy interactions), and then factor in individual student preferences in order to enhance the overall student learning experience. Merrill goes on to state that even though he recommends teachers use the content-by-strategy method first, the "learning-by-strategy" interactions may increase a student's learning self-awareness. In doing so, teachers could help the student to better understand his or her strengths and weaknesses and thus become more knowledgeable about theirs and others learning (Coffield, 2004). This may lead to better self-advocacy and self-awareness by students in the classroom, a common goal for school counselors in every setting.

Finding a Reliable, Valid, and Effective Model

Shirley Griggs (1991), author of *Learning Style Counseling,* makes a strong argument for the Dunn and Dunn Learning Style Inventory (LSI) model. She claims that the LSI model works the best in the school setting based on its multidimensional approach, its high rates of reliability and validity, and its relatively strong base of research. Griggs recommends that for grades K-2 the Learning Style Inventory – Primary Version is an appropriate learning style assessment because of its use of a pictorial questionnaire. For grades 3-12, the 104 item self-report LSI

questionnaire is suitable in identifying environmental, emotional, sociological, physical, and psychological learning preferences for elementary through senior high students. Finally, for identifying adult learning preferences of teachers, counselors and staff, there is the Productivity Environmental Preference Survey by Dunn, Dunn, & Price (1982). This survey consists of one hundred questions that help to identify an adult's preference in his or her work and learning environment.

Dunn and Dunn's (1978) LSI method places individuals into four distinct categories based on their perceived learning strengths. These categories are commonly identified by the acronym "VAKT", or "Visual, Auditory, Kinesthetic, and Tactile." As the term suggests, individuals who score high in the visual category learn best with visual stimuli when presented with new information, whereas other learn best with auditory, kinesthetic, or tactile stimuli. According to Dunn and Dunn's (1993) research, approximately 40 percent of the population is visual learners, which means that visual learners will remember 75 percent of what they read or see. This percentage can change by age. Dunn and Dunn state that more young children tend to be highly kinesthetic (experiential learners) and tactile learners (learning by writing or drawing). Although some children grow up to develop strengths in other learning styles, many of them do not. This can clearly become an issue at the middle school level and above where auditory and visual representations of new information dominate. We are thus lead to the question of whether or not assessing students using Dunn and Dunn's (1978) Learning Style Inventory is effective for addressing and guiding instructional methods in the classroom.

In terms of effectiveness, the Dunn and Dunn (1978) model may be reliable, valid and have a strong research base, but is it effective in establishing positive institutional change in the school environment? The answer is yes. Looking back at the successful example given in the

introduction, the Dunn and Dunn (1978) Learning Style Inventory (LSI) was used as the data collect tool of choice for the North Carolina school that improved student test scores from the 30th percentile up to the 85th percentile on the California Achievement Test of Basic Skills (CTBS). It is clear from this example that the Dunn and Dunn LSI was successful in accurately identifying student and teacher learning style preferences and indicating application. Findings from the LSI led to systematic changes in how students where taught and absorbed information, and how teachers facilitated learning in their classrooms.

The role of the school counselor is key in the implementation of a program of this nature. First, Griggs (1991) highlights the importance of counselors and teachers undergoing the Productivity Environmental Preference Survey in order to identify their own learning preferences. She states that counselors who recognize their own learning styles become more aware of the type of counseling techniques they unconsciously implement. Such self-awareness is useful for identifying unintentional prejudices for or against certain learning preferences. Griggs (1991) goes on to explain that "the starting point in teaching and counseling is to respond to the learning style needs of students, which implies knowledge of our own preferences and a conscious effort to expand our repertoire of counseling interventions and techniques to respond to student diversity". We must understand our own learning preferences first before we can attend to our students' needs. In doing so, we better modify our counseling techniques with various students and situations. Secondly, the idea of "Learning Style Counseling", counseling administered with the awareness of learning preferences of all parties involved in the school setting, is a method that can be employed and led by counselors in the schools (Griggs, 1991). This comprehensive concept incorporates learning preferences into most school counseling

duties. However, before we can address the idea of "Learning Style Counseling" we must first identify school counselors' roles and responsibilities and the federal laws that guide them.

Federal Mandates

Two federal mandates that have had a significant effect on counseling roles and responsibilities in the last decade have been the No Child Left Behind Act (NCLB) of 2001 and the Individuals with Disabilities Education Act (IDEA) in 2004 and its revision in 2007. NCLB was a passed by the Bush administration in 2001 in an effort to level the academic playing field and to bridge the gap between lower and higher achieving students. NCLB enacts the theory of standards-based education reform, embodying the belief that setting high standards and establishing measurable goals can improve individual outcomes in education. The Act requires states to develop assessments in basic skills to be given to all students in certain grades, in order for those states to receive federal funding for schools. The Act does not assert a national achievement standard. The standards are set by each individual state.

No Child Left Behind requires all public schools to administer a statewide standardized test annually to all students. Schools that receive Title I funding must make Adequate Yearly (AYP) Progress in test scores (e.g. each year, its fifth graders must do better on standardized tests than the previous years). If a Title I school fails to make AYP, then it is put on a list of "failing schools" published in the local paper and parents are given the option to transfer to another school. If it does not meet AYP for a second year, then it must provide special tutoring for its economically disadvantaged students. In theory, schools that don't make AYP for years are eventually subject to restructuring or closure. In practice, this has rarely occurred. Supporters of No Child Left Behind state that it adds needed accountability standards for schools, teachers and students. Critics say that NCLB is poorly funded, penalizes schools that need the greatest

level of financial support, and encourages teachers to "teach to the test" instead of focusing on the individual students' academic needs (Ellis, 2007).

The second major piece of federal educational legislation to come about in the last decade is The Individuals with Disabilities Education Act (IDEA). The IDEA is a federal law that governs how states and public agencies provide early intervention, special education, and related services to children with disabilities. It addresses the educational needs of children with disabilities from 13 specified categories, and covers them from birth to twenty-six years of age. IDEA is "spending clause" legislation, meaning that it only applies to those States and their local educational agencies that accept federal funding under the IDEA.

While States declining such funding are not subject to the IDEA, all States have accepted funding under this statute and are subject to it. The IDEA and its predecessor statute, the Education for All Handicapped Children Act, arose from federal case law holding that the deprivation of free public education to disabled children constitutes a denial of due process. It has grown in scope and form over the years. IDEA has been reauthorized and amended a number of times, most recently in 2007. IDEA has had a major effect on schools and their staff. By defining the purpose of special education, the IDEA clarifies the federal government-intended outcome for each child with a disability: "students must be provided a Free Appropriate Public Education (FAPE) that prepares them for further education, employment and independent living." This mandate directly affects teachers and counselors by forcing them to properly educate students with disabilities to meet FAPE standards. Consistent with research (West & Idol, 1993), the IDEA also directly states that there must be a high level of collaboration between educational staff to plan and implement practices to meet the federal standards.

Role of the School Counselor

The American School Counselors Association, or ASCA (2003), states that school counselors should focus on three main areas of service for students: 1) academic, 2) career, and 3) personal/social. Within that framework the counselor's role is very comprehensive. School counselors address all three areas of focus through a variety of services and roles. They develop and lead individual and group therapy sessions, which primarily focus on learning processes. School counselors coordinate and implement school wide programs in career education, psychological education, tutoring, peer helping, and skill development in communication, conflict resolution, problem solving, decision making, and time management and studying (Griggs, 1991). Counselors also consult with teachers and administrators to better enhance individual learning environments, a quality that is highly stressed in federal mandates. In many schools school counselors are also responsible for course scheduling, administering standardized tests, and addressing any and all crises that may occur during the school day. The roles and responsibilities of the school counselor are complex and varied. However, because counselors have such unique and critical roles in schools, they are in an exceptional position to address and employ learning style preferences into the school atmosphere.

Learning Style Counseling

Learning style counseling is a concept developed by Shirley Griggs (1991) to incorporate learning style models and philosophy into the school environment via the school-counseling role. Griggs (1991) lays out the following steps in implementing and administering the learning style counseling method supported by the research and knowledge by Dunn and Dunn's learning style model:

1) Assess the developmental needs of students, psychosocial crises, and developmental tasks that are stage-related, and the special needs of groups, such as bilingual/bicultural students, and gifted and talented students.

2) Develop a comprehensive, developmental counseling program based upon the needs assessments.

3) Assess the individual learning styles of students, counselors, and teachers and counsel students to help them develop an understanding of their learning style preferences.

4) Plan teaching and counseling interventions that are compatible with the learning style needs of students.

5) Evaluate teaching and counseling outcomes to determine the extent to which program objectives and counseling goals have been achieved.

The first two steps are fairly common practices among school counselors today. They assess the needs of their students and set up programs and services to address those needs. The third step takes this formula to a new level. It incorporates the assessment of learning styles of all the parties involved. In doing so, both students and the teachers involved become more cognitively aware of what 'works' for the student in the classroom. The fourth step looks at the learning style data that was collected from the teacher, student and possibly counselor to come up with techniques that will enhance the student's learning ability. The follow section describes what areas of learning preferences are addressed by taking the Learning Styles Inventory.

Matching Learning Style Preferences with Appropriate Counseling Techniques

The following informational areas about student learning styles are revealed through the use of Dunn and Dunn's Learning Styles Inventory (1985):

1) Environmental: bright versus dim light; sound present or absent; warm versus cool temperature; formal versus informal design.

2) Emotional: high versus low structure; low versus high level of persistence, motivation; and responsibility versus nonconformity.

3) Sociological: preference for learning alone; in pairs; with adults, peers, team, or varied.

4) Physical: auditory, visual, tactual, or kinesthetic perceptual strengths; high versus low mobility; and time of day preferences.

5) Psychological: global versus analytic; impulsive versus reflective; cerebral dominance.

Other techniques such as art therapy, bibliotherapy, mime, musical improvisation, and mutual storytelling with children, and compatible learning style preferences can be used to assist and lead in addressing a variety of student and teacher learning style preferences (Griggs, 1991).

Consultation between Professionals

Griggs (1991) highlights the importance of consulting with teachers while implementing her learning style counseling model. She states that school counselors need to be skilled in consultation models and techniques because counselors are perceived by educators as knowledgeable in learning style models. Counselors' main objective is to advocate for the student, in essence "humanizing" the school system. School counselors improve upon the educational environment by addressing the unique differences between students and by consulting with those students' teachers and parents. Therefore, school counselors are in a unique position to enhance classrooms and curriculum strategies to accommodate the variety of learning style preferences of students.

Questions to be Addressed in Discussion

- Are learning style models effective and practical in an educational setting?

- If so, what is the role of a school counselor in regards to learning style models in the school setting?

- What can school counselors do to encourage the use of learning style-focused curriculum, strategies, and assessments, if anything?

Chapter III: Discussion

The discussion section will encompass the following: a summary of previously covered material, a critical analysis of that subject matter, suggestions and recommendations for counselors in the field with regards to learning style models, and finally, recommendations for further research.

Summary

The material covered in Chapter Two: Literature Review will be briefly addressed in this section. First, the heading entitled *"What is Learning Style"* described learning style as how each of us individually receives and processes information. It is important to remember that our learning style or "learning preference" is unique but is not set in stone and may, in fact, change over time. The following sections, *Learning Style Theory, Learning Style Models,* and *Critiques of Learning Style Model,* discussed the history of how learning style arose in the early 1970's and progressed to where it is today. In short, researchers and theorists like Kolb (1984) began to develop models to assess and explain individual learning techniques. Curry (1987) started to categorize the various models and assessments using her 'onion' model. Her theory suggested that at the core of individual learning is "cognitive style," a fixed, stable, and biological base for learning, something that is very difficult to change or adapt. This differs from the outer layer, "instructional preferences," that stated that learning styles are not fixed biologically, but are merely preferences relating to the environment (i.e. teaching style). Yet, critics (Coffield et al., 2004) believe that we can never truly know what lies at the core of learning and that the models of learning styles tend to be driven by theory and not by empirical evidence.

This led to the section called, *Finding a Reliable, Valid, & Effective Model.* Shirley Griggs (1991), author of *Learning Style Counseling,* makes a strong argument for the Dunn and

Dunn Learning Style Inventory (LSI) model in this section. She states that the Dunn and Dunn LSI model works the best in the school setting based on its multidimensional approach, its high rates of reliability and validity, and its relatively strong base of research. She highlights the Visual, Audio, Kinesthetic, and Tactile (VAKT) model, making references to the high numbers of students who are predominantly tactile and/or kinesthetic in nature. Griggs then goes on to suggest a format called "Learning Style Counseling" which was discussed in more depth in the following sections.

The next section, *Federal Mandates,* touched on the most recent federal laws that have guided school curriculum and guidance in the past couple of decades. The No Child Left Behind Act (2001) set standards and accountability measures unprecedented in the educational community. With its goal of closing the gap between lower and higher achieving students and raising national tests scores as a whole, it also ushered in a great deal of criticism from teachers and staff who spoke about lack of funding for the program and the negative consequence of having to "teach to the test". The second major federal mandate was the Individuals with Disabilities in Education Act (IDEA, 2004) that governs how states and public agencies provide early intervention, special education, and related services to children with disabilities. This Act reaffirms that a student with a disability has a right to a government funded Free and Appropriate Public Education (FAPE) that prepares them for further education, employment and independent living.

The section, *Role of the School Counselor*, stated that school counselors should focus on three main areas of service for students: 1) academic, 2) career, and 3) personal/social. Within that framework the counselor's role is very comprehensive. School counselors address all three areas of focus through a variety of services and roles. These include but are not limited to

individual and group therapy sessions, consultations with parents and teachers, test administration, scheduling, and a variety of other student and family advocacy services.

The section *Learning Style Counseling*, discussed Shirley Griggs (1991) and her model to incorporate the Dunn and Dunn learning style model into the school environment through the school-counseling role. Griggs' (1991) first step in the process is assessing the needs of the students and the school, especially those of students who may require special assistance. The second step is to develop a comprehensive model to address those needs. Third, assess the individual learning styles of students, counselors, and teachers and counseling student to help them develop an understanding of their learning style preferences. Fourth, plan teaching and counseling interventions that are compatible with the learning style needs of students. And finally, evaluate teaching and counseling outcomes to determine the extent to which program objectives and counseling goals have been achieved.

Griggs' (1991) work is further described in the following sections, *Matching Learning Style Preferences with Appropriate Counseling Techniques* and *Consultation with Professionals*, to explain two of the five steps in greater detail.

The last section of the literature review and the starting point of the discussion section are found in *Questions to be Addressed in Discussion.*

Discussion and Critical Analysis

In this section the questions proposed at the end of Chapter II: Literature Review will be discussed and critiqued. The questions will be addressed as follows:

- Are learning style models effective and practical in an educational setting?
- If so, what is the role of a school counselor in regards to learning style models in the school setting?

- What can school counselors do to encourage the use of learning style-focused curriculum, strategies, and assessments, if anything?

In response to the first question, "Are learning style models effective and practical in an educational setting?" the answer is, "it depends". It depends on a variety of factors. The first part of the question asks are learning style models effective? The answer depends on the learning style model being used. According to Coffield et al. (2004), most learning style models lack sufficient empirical evidence to support their claims of effectiveness. This is due to the lack of empirical studies done on learning style modalities. However, according to Griggs (1991), Dunn and Dunn's (1978) learning style model, commonly referred to as the "VAKT" model, shows sufficient levels of validity and reliability in studies to constitute a solid format for administering what Griggs calls "learning style counseling".

In response to the second part of the question, "are learning style models practical?" again the answer is, "it depends". Following Griggs (1991) outline on how to implement "learning style counseling" in a school, the following criteria must be met in order for the learning-style model to be useful, effective and practical in an educational setting. 1) First, is the school counselor knowledgeable enough about learning style models and theory to properly explain, develop, implement and evaluate a learning-style counseling curriculum? 2) Second, is the administration and staff supportive, understanding, and willing to implement the idea of a learning-style focused curriculum? 3) And third, does the school have the resources available, both monetarily and personnel-wise, to successfully follow through with a comprehensive learning-style focused curriculum? If even one of these criteria is not met, a learning style-focused school-wide model will be difficult to implement. Therefore, the learning style

counseling model will tend to be neither effective nor practical for a school counselor to establish in a school.

If those criteria are met with great enthusiasm, the learning-style counseling model can be an effective tool in supporting students' overall success in the classroom. This was shown to be true in the study mentioned in the introduction regarding a school in North Carolina that successfully established a learning style-focused program with extremely positive results. However tempting it is to jump on board with the model of learning style counseling, one positive result does not seem sufficient enough to sway some school counselors and administrators. More studies must be conducted and must yield positive results to strengthen the correlation between success in the classroom and learning style counseling methodology.

The second question to be addressed is, "If learning style models are effective and practical, what is the role of a school counselor in regards to learning style models in the school setting?" Assuming that the North Carolina study is proof positive that the learning style counseling method is successful, what would be the role of the school counselor who wants to establish this method in his/her school?

Using Shirley Griggs' (1991) outline on her learning style counseling model as a guide, the following steps should be taken by a school counselor to establish a learning style focused program. First, the school counselor must educate themselves on the theory and methodology surrounding the learning style counseling method. This will include being proficient in understanding and implementing the various Dunn and Dunn (1978) learning style assessments for the appropriate age ranges. This will also include the knowledge and ability by the school counselor to properly assess a school's academic, social/personal and career needs, as well as translating those needs into a comprehensive learning style focused school-wide program. The

counselor will then have to be able to recruit administration and staff to properly support the program in all its aspects. Finally, the school counselor will have to have the knowledge and resources to successfully evaluate and analyze the program after it has been implemented.

The final discussion question is, "What can school counselors do to encourage the use of learning style focused curriculum, strategies, and assessments, if anything?" Clearly, school counselors can do a variety of things to encourage the use of learning style-focused curriculum, strategies and assessment. Counselors may start by educating themselves thoroughly on Griggs' (1991) methods of learning style counseling. Second, part of a school counselor's job is to communicate and consult with fellow professionals regarding student affairs. During this process of consultation, which is highly stressed in both the No Child Left Behind and Individuals with Disabilities in Education Act, counselors may choose to use and teach learning style methodology to assist their peers in the school. By modeling behavior and by implementing techniques used by the learning style model successfully, teachers, parents, administration and students will take notice and hopefully adopt the idea that learning style methodology is not only helpful, but also essential in student academic success.

Recommendations for Counselors

I submit the following recommendations to school counselors regarding learning styles: 1) Understand learning styles as a predisposition; a student may be biologically be predisposed to a certain learning method, but that does not solidify their style; environment can play a significant factor in modifying their learning style if addressed early and often; 2) Learning style assessments are tools for dialogue, not diagnosis; 3) Learning style methodology is only one piece of the educational puzzle for students; 4) Remind teachers that curriculum should be content-centered first and student learning preference second.

Recommendations for Further Research

My recommendations for further research stem from concerns arose during research. First, in reviewing the literature, certain themes appeared regarding most of the learning style models and assessments. Supported by Coffield et al. (2004) research, there is an unclear direction in learning style theory and modality. This is due to the lack of quality empirical evidence surrounding the majority of learning style assessments. Therefore, more research into the validity and reliability of learning style models is required, specifically in the educational setting.

Second, there is the risk that paying too much attention to learning styles may in fact have adverse consequences in the education of children. If, as a result of changes made in light of learning styles, students are only taught in one specific style, the average student will be rendered unprepared for the complex workforce and therefore be unable to successfully adapt in the future to differing work and/or educational environments. Further research would shed more light on this question and its implications for the classroom.

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