Learning Styles Research: Understanding How Teaching Should be Impacted By the Way Learners Learn Part III: Understanding How Learners' Personality Styles Impact Learning



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Abstract: Over the years, educators have asked questions about how people learn. In this series of articles, the importance of learning styles has been explored from both the instructors' and students' perspectives. In this third and final article, the correlation between a student's personality and his preferred learning style is examined and implications explored for Christian education contexts.

Introduction

Studies on learning styles give attention both to how a student learns and to how a student prefers to learn. Learning style research was first documented as an emerging concept during the 1970s. Researchers such as Gregorc have underscored the importance of understanding learning styles: "Knowledge of the relationships between and among specific stylistic characteristics and their underlying forces can give an astute student of style a means of coming to understand some of the hidden forces behind individual differences and some of the subtle demands built into media and in the environment" (Gregorc, 1984, p. 51).

To organize types of learning style theories, Curry developed a model based on a survey of 21 recognized theories. The Curry Model was initially organized into a three-layered system that she described as the layers of an onion. The outer layer of the model describes the way the learner interacts with the learning environment and with instructional practices. The middle layer focuses on how information is processed. The center or core of the model focuses on learning behaviors associated with the learner's central per-

sonality style (Hickcox, 1995). Curry later updated her research by dividing the outer layer into two layers. The outer layer is now dedicated to instructional preference and classroom environment. The second layer now encompasses theories of how social interaction affects learning (Cassidy, 2004). These two outer layers were presented in the first article in this series, which was published Spring 2006. The middle layer was presented in the second article in this series, which was published Fall 2006. The third, central layer is the subject of this discussion.

Reviewing Curry's Central Layer

Curry identified several researchers in the central layer of her model. The learning style theories of Kagan, Myers, and Witkin were included in this classification (Hickcox, 1995). In his article highlighting learning styles theories and models, Cassidy (2004) included Gregorc in this classification as well. These theorists focus on how students approach learning by "adapting and assimilating information. This adaptation does not interact directly with the environment. Rather, these are underlying and relatively permanent personality constructs" (Hickcox, 1995, p. 36). The research of Gregorc, Myers, and Witkin will be the focus of this discussion.

Gregorc's Learning Style Delineator

Anthony F. Gregorc has researched the area of phenomenological style, or the study of how objective reality and subjective response affect an individual's approach to learning.

When viewed from a phenomenological perspective, stylistic characteristics reveal themselves to be surface indicators of two deep levels of the human mind: whole systems of thought, and peculiar qualities of the mind which an individual uses to establish links with reality. This perspective means that personal characteristics such as a concern for detail, the sincere valuing of grades, and the facile use of logic to determine truth are not merely happenstance. Like the need for options, the search for meaning, and the wont to draw inferences, these characteristics are integrally tied to deep psychological constructs. (Gregorc, 1984, p. 51)

Gregorc has concentrated his research on measuring bipolar models of how learners perceive and order new information. His research has identified perceptual preferences for acquiring information through either abstract or concrete processes or a combination of the two. Abstract perception uses intuition and reason while concrete perception relies on the physical use of senses to process information. Additionally, random or sequential ordering patterns indicate the learner's preference for arranging, prioritizing, and using new information. The combination of these two bi-dimensional characteristics describes a duality that can be used to explain how learners approach learning, thinking, and reality (Gregorc & Ward, 1977). Gregorc states, "Everyone has all of these qualities, but most people also have innate tendencies that 'tip' toward one aspect of a duality rather than the other; i.e. we are more concrete than abstract or more sequential than random" (Gregorc, 1979, p. 19).

Gregorc identified four different learning styles: Concrete Sequential, Concrete Random, Abstract Sequential, and Abstract Random. Concrete Sequential learners prefer to learn through hands-on experience and step-bystep instructions (Gregorc, 1979). They are logical and sequential in ordering new information and use all five senses during learning. These learners depend on logic and strive to achieve perfection. Concrete Random learners, on the other hand, prefer to learn experimentally through trial and error. They want the flexibility to explore the environment and the learning experience and thrive on solving problems. However, their preference for processing information randomly can cause them to jump to conclusions that may or may not be correct (Jonassen & Grabowski, 1993). Concrete random learners respond well when they are given the opportunity to discover answers on their own and prefer to work independently or within a small group (Gregorc, 1979).

Abstract Sequential learners prefer to learn by decoding symbols and drawing upon stored mental pictures. They want rational and sequential presentations of material and rely on theories for processing information (Gregorc, 1979). Abstract sequential learners respond well to teachers who present meaningful, well-organized information, even if the presentation is boring. The abstract sequential student learns by incorporating new ideas, theories, and concepts into the web of information he already has stored in his memory. Abstract Random learners, however, are keenly aware of human behavior, mood, and attitudes. They prefer to learn in unstructured settings and through group discussion. Abstract random learners process all information received through the filter of their personal experiences and their emotional responses. For them, learning is a very personal endeavor, and working with others is important (Jonassen & Grabowski, 1993). Abstract random learners tend to gather information but delay in reacting to it (Gregorc, 1979).

To identify individual thinking and learning styles, Gregorc developed the Gregorc Style Delineator (Gregorc, 1982). The test instrument is "a selfreport tool used to measure thinking and learning processes. It is designed to help individuals understand and recognize the channels by which they receive and process information efficiently" (Drysdale, Ross, & Schulz, 2001, p. 274). Learners answer 40 questions by ranking four words in the order that most accurately describes them. By personally interviewing each student, persons who administer the Gregorc Style Delineator to students can confirm the test results (Cassidy, 2004; De Bello 1990; Gregorc, 1982).

How Gregorc's Learning Styles Impact Students

Gregorc Learning Styles were developed on the premise that all learners have an internal and subjective preference for learning that is unique and individual. According to Gregorc (1982), "the human mind has channels through which it receives and expresses information most efficiently and effectively" (p. 5). Additional research has discovered interesting information that can affect classroom learning.

Seidel and England (1997) conducted a study to determine the connection between a student's learning style and preferred field of study. Though their sample was small, only 100 students, they discovered that "Concrete Sequential and Dual Sequential learners tend to major in the Sciences, where classroom activities are geared toward hands-on, structured performance" (p. 18). By contrast, "Dual Random learners tend to major in the Humanities, and Abstract Random learners generally choose majors in the Social Sciences or Humanities. Courses within these majors tend to provide more opportunity for unstructured learning through discussion sessions and through independently conceived projects and writing topics" (p. 18–19). In summation, their study indicated "students scoring high on the sequential styles tend to prefer structured activities while students scoring high on the random styles tend to prefer activities involving freedom of design and expression" (p. 19).

Drysdale et al. (2001) conducted a 4-year study of more than 4,500 students to identify successful versus at-risk students in their first year of collegiate work. They discovered that Abstract Sequential (AS) students performed best within the first year of college. In all courses other than arts and drama, they recorded more "A" grades and higher GPAs than students preferring other learning styles. Concrete Sequential (CS) students performed best in computer science, economics, engineering, and statistics. "CS learners prefer step-by-step processing, lab exercises, and cause and effect relations. These tend to be found in the math- and science-related fields" (p. 285). By contrast, Concrete Random (CR) students recorded higher scores in art, drama, and kinesiology, which emphasize "multidimensional responses and nonlinear thinking" (p. 285).

Ross and Schulz (1999) used the Gregorc Style Delineator to predict student success using computer-aided instructional (CAI) methods. CAI allows instructors to vary their teaching methods to meet the needs of students by

incorporating "realistic and stimulating learning environments" in the classroom (p. 5). Students' learning styles were determined by the Gregorc Style Delineator. Prior to completing a computerized instructional session, students answered a pre-test questionnaire. After the CAI session, they completed a post-test assessment of their knowledge of the subject. The Abstract Sequential learners demonstrated the greatest improvement in knowledge of the subject. Concrete Sequential and Concrete Random students registered some improvement in knowledge. However, the Abstract Random (AR) students registered lower scores on the post-test than on the pre-test. In addition, "AR participants spent less time with the program, used less video and made fewer interactions with the computer than did the other three dominant learning styles groups" (p. 15). Based upon these findings, Ross and Schulz (1999) urge teachers to use caution when including CAI as a significant teaching method. Abstract Random students should not be expected to respond well to this teaching method because they require discussion and interaction with other students to maximize learning.

Gregore (1984) compared learning strategies for these four learning styles. Concrete sequential learners tend to use workbooks and computer instruction while concrete random learners use simulation games and independent study. Abstract random learners tend to prefer group discussion as well as television and movies, while abstract sequential learners tend to use lectures and audio tapes and are readers.

How Gregore's Learning Styles Impact Teachers

Gregorc's research has also evaluated the impact of teaching styles on the learning experience. He found that when teaching and learning styles are matched over long periods of time, teachers and learners fall into a comfortable learning pattern that does not necessarily challenge either. Therefore, boredom can be the end result when teaching and learning styles are too closely aligned. When teaching and learning styles are somewhat mismatched, both teacher and student can be challenged to learn through new experiences. For example, students who prefer to learn verbally through a lecture can be challenged to personalize information when they are assigned to a small group for discussion of material received. However, great mismatching can lead to frustration, anger, and avoidance (Gregorc, 1979). On the other hand, a student who prefers to learn verbally through lecture will struggle to connect to a discussion-formatted teaching style and may even mentally withdraw from the process.

Gregorc cautioned instructors to use personal observation in conjunction with the Gregorc Style Delineator to determine students' learning styles preferences. He acknowledged that students might not answer the question-

naire honestly or might "report their adaptive behavior rather than their natural preferences" (Wilson, 1998, p. 5). Since many teachers will not feel adequate in making this determination, developing teaching strategies that involve all four types of learners throughout the life of the course becomes imperative. These intentional strategies will strengthen the learning experience and be inclusive of all learning types.

Keri (2003) cited a study conducted by Sewall (1986) that raised questions concerning the reliability of the Gregorc Style Delineator. Sewall concluded that the instrument "lacks rigorous empirical evidence to support its use and application. . . . The manual alerts administrators to be cautioned by the use of the instrument for diagnosis or prescription. The manual points out that it is generally designed for self-validation" (p. 353). Gregorc's research, however, has indicated high levels of reliability and validity. For example, in the initial use of the instrument, "Gregorc reported internal consistency from .89 to .93, and test-retest reliability at .85 to .88" (Jonassen & Grabowski, 1993, p. 292). Gregorc has substantiated his findings in additional research as well.

Implications of Gregore's Research for Educators

Several implications can be considered. First, the task for the teacher in adapting this information is to intentionally challenge students by using learning methods that are both comfortable and challenging for the student. In so doing, the teacher creates a dynamic learning process that can be enjoyable, challenging, and informative. The goal is to help students develop the ability to learn through methodology that might initially be uncomfortable. This intentionality of process will help the teacher communicate and teach more effectively to a variety of students.

Second, at a time when schools are offering multiple online learning experiences, care should be taken in curriculum development to ensure that all students will have a good learning experience online. Since abstract random students require a higher level of personal interaction, instructors must intentionally design the course to include opportunities for discussion. The scheduled use of chat rooms, threaded discussions, and group discussion boards should be used to keep the individual involvement level high.

The Myers-Briggs Type Indicator

The Myers-Briggs Type Indicator (MBTI) was one of the earliest assessment tools for describing personality traits (Hickcox, 1995). The instrument, developed by Isabel Myers and her mother, Katherine Briggs, in 1962, was

drawn from Jung's work concerning psychological types (Denham, 2002). Originally, adults answered 143 questions by choosing from four different possibilities. "Each choice [was] oriented toward one of four bipolar concepts: extroversion versus introversion, sensing versus intuition, thinking versus feeling, and judging versus perceiving" (Hickcox, 1995, p. 36). The MBTI has undergone multiple revisions over the years. The number of questions asked and the amount of time needed to complete the assessment have both been reduced to increase the instrument's usability (Wheeler, Hunton, & Bryant, 2004).

When the results are scored, students are classified into one of 16 personality types "based on the way they view their environment, make decisions, focus on the inner world of ideas and concepts or the outer world of people and things, and respond to situations with acceptance or judgmental attitude" (Miller, 2001, p. 2). Within the MBTI, learning style is described as a personality-related preference. Wheeler et al. (2004) emphasized that learning style and personality preferences remain constant over time. Therefore, completing the MBTI can help the individual identify both the strengths and weaknesses found within his own personality preferences toward learning.

Curry assigned the MBTI strong ratings for validity and good ratings for reliability (Hickcox, 1995). Lemire (2001) found more than 4,000 articles written about the MBTI and reviewed numerous studies that tested its reliability and validity. While most of the articles supported the MBTI, problems were noted. Some researchers suggested that the instrument is too complicated for use in the typical classroom. According to Denham (2002), the MBTI manual lists several factors that influence the instrument's reliability: "gender, age, education, achievement levels and the strength of individual preferences" (p. 3). Students who repeatedly choose stronger preference indicators will receive more meaningful results from the instrument. Students who choose weaker preference responses will not receive valuable insight. Therefore, testing results are not equally helpful.

Wheeler et al. (2004) named several limitations within the MBTI. First, Jungian theory suggested that personality traits are inborn and do not change. However, an individual's preference for these traits develops during adolescence, peaks during young and median adult years, and begins to decline during senior years. Second, "the bipolar nature of the . . . MBTI captures the *direction* of a preference rather than its *strength*" (p. 7). Third, though the MBTI is considered a reliable and valid instrument, it may not be the best choice for all testing circumstances.

Hanson and Silver (1995) identified the learning characteristics of four different personality combinations drawn from the sensing/intuition and thinking/feeling measurements. The sensing/thinking learning style (ST) describes learners who use their senses when acquiring new information and

who prefer to make decisions that are based on logical and objective analysis (Francis & Jones, 2000). These students "want concrete, specific information and need to know what is right and wrong. They need a structured environment and lose interest if things move too slow or don't seem practical. They learn best from repetition, drill, memorization and actual experience. They need immediate feedback" (McClanaghan, 2000, p. 481).

The intuitive/thinking learning style (NT) describes learners who focus their attention on the larger concepts when learning new information. They will consider the "possibilities, meanings and relationships" beyond the factual data conveyed in the learning experience and make decisions that are based on logical and objective analysis (Francis & Jones, 2000, p. 378). Students with this learning style "are skeptical, analytical and logical. They trust hard evidence and reason. They prefer to work independently; they understand things and ideas by breaking them down into their component parts. They want to be challenged and allowed to be creative, and are concerned with relevance and meaning. They have great patience and persistence if their attention is captured" (McClanaghan, 2000, p. 481).

The sensing/feeling learning style (SF) describes learners who use their senses when acquiring new information and who prefer to make decisions based on subjective values and the potential impact on other people (Francis & Jones, 2000). Students with this learning style "process information based on their personal experience. They respond to collegiality, trust, respect, and learning cooperatively. They view content mastery as secondary to harmonious relationships. They are very sensitive to approval or disapproval. They learn best by talking and like group activities" (McClanaghan, 2000, p. 481).

The intuitive/feeling learning style (NF) describes learners who focus their attention on the larger concepts when learning new information and make decisions based on subjective values and the potential impact on other people (Francis & Jones, 2000). Students with this learning style "are looking for possibilities and patterns, and connections with prior learning. They look for uniqueness, originality, and aestheticism. They learn best in a flexible and innovative atmosphere. They have difficulty planning and organizing their time. They need to see the big picture. They are bored by routine and rote assignments" (McClanaghan, 2000, p. 481).

How the MBTI Impacts the Classroom Experience

According to McClanaghan (2000), the MBTI has been used to help students identify their primary personality characteristics and resulting learning styles. With knowledge of their primary learning modes, students can choose courses and instructors that match their needs. Since this ideal situation does not always exist, students can also learn to compensate for differences when

their learning style does not match the instructor's teaching style. When students are able to capitalize on their strengths and compensate for their weaknesses, they achieve greater levels of competence in all subjects. She stressed that "helping students learn how to learn may be the most important lesson faculty can teach students" (p. 485).

Teaching students how to learn usually requires additional effort on the part of the teacher. This additional effort can have a huge payoff for both teachers and learners. Possible activities can include talking to students about expectations, study strategies, and learning strategies. For example, students who prefer objective-style tests may struggle with preparing for and taking essay-style exams that require students to personalize and integrate learned concepts. Teachers who are willing to help students learn how to prepare for both testing styles can see a marked improvement in student achievement and satisfaction.

Studies have been conducted to determine the impact of these individual differences on distance education students. Irani, Telg, Scherler, and Harrington (2003) conducted a study of 39 graduate students who were participating in a distance education course. Their goal was to examine "the relationship between students' course perceptions and performance" (p. 445). Their findings demonstrated a correlation between course perceptions, preferred teaching methodology, and personality. "Sensing types favor collaborative and dependent learning methods and intuitive types prefer holistic and independent methods" (p. 446). These researchers found that students who demonstrated success in online or telecourse distance education have different personality types than those students who were successful in the college classroom. "Successful telecourse students were more introverted and selfindulgent and tended to meet their responsibilities in efficient, expedient manners" (p. 447). Not surprisingly, students with extroverted personalities associated the lack of social interaction, teaching methods, and course management as causes for lower grades. Introverts indicated that only teaching methods influenced their achievement in the course.

Implications of MBTI for Educators

Several issues should be considered from research findings based on the MBTI. First, since personality traits remain somewhat unchanging throughout the lifetime, knowledge about these traits can help the individual become more successful in using their personality strengths and in adapting their personality weaknesses when learning. Self-awareness can help both the student and the teacher create a more effective learning experience.

Second, the MBTI is designed to evaluate rather than judge a student's learning personality. "The indicator seeks to identify a respondent's status on either one or the other of *two opposite personality categories*, both of which are

regarded as neutral in relation to emotional health, intellectual functioning, and psychological adaptation" (Myers, McCaulley, Quenk, & Hammer, 1998, p. 5). Therefore, findings are descriptive rather than prescriptive.

Third, students should be informed of the impact of personality traits on success in distance education. Irani et al. (2003) suggested the need to reevaluate the course advisement process for distance education students. They stated that research should be used in the student assessment process for each course to help "students establish a 'fit' with their distance education program. These instruments can assess student traits as they come into a distance education program, and can be used as a self-diagnostic tool by students to ascertain whether a particular program or course experience is right for them" (p. 452). Non-distance education students can also benefit from this kind of assessment:

Nelson et al., (1993) found that college students who were assessed on their learning styles, received an interpretation of their strengths and weaknesses, and were provided instructional sessions on applying those strengths and weaknesses achieved significantly higher grade-point averages and higher retention rates than those students: (a) who were assessed on their learning styles and only received an interpretation of their strengths and weaknesses, and (b) those who received no learning style intervention. (quoted in Hardigan & Cohen, 2003, Introduction section, para. 3)

Fourth, personality traits have been used to suggest possible success within some career fields. Once the student completes the MBTI, the results can be used to help students investigate potential career choices. By matching students to careers that require their personality characteristics, students are more likely to "find a fulfilling job that enhances the quality of life" (Denham, 2002, p. 5).

For example, Lawrence and Martin (2001) found that the MBTI has been used in three different aspects of career counseling. As an initial step, the student completes the MBTI. Based upon the individual's personality, the counselor is able to indicate potential careers that might suit the student. On a functional level, the MBTI can indicate how the student approaches work, gathers and analyzes information, makes decisions, and responds to stress. Counselors can also use the MBTI to help students plan for career development or career changes by helping the student match his personality traits with his stage of life. While matching "an individual to a career or a job that 'fits' his or her type" is sometimes advantageous, counselors should never insist that a person consider only career choices dictated by the MBTI results (p. 140). Kennedy and Kennedy (2004) suggest that understanding one's personality type offers several advantages:

It can provide confidence in one's own direction of development and help to reveal the areas in which one can become excellent with the most ease and pleasure. It can also reduce the guilt one might feel at not being able to do everything in life equally well. Acknowledging one's own preference opens the possibility of finding constructive values instead of conflicts in the differences one might encounter with someone whose preferences are opposite one's own. (p. 43)

Witkin's Field Dependence/Independence Theory (FD/I)

Herman Witkin, a social psychologist, researched "the extent to which an individual uses context in order to understand and to make sense of new information" (Smith, 2002, p. 65). His research led to the development of the field dependence/independence (FD/I) theory. The strength of Witkin's theory has been substantiated over a 30-year period by numerous researchers (Pithers, 2002).

To test his theory, Witkin developed the Embedded Figures Test (EFT) and the Group Embedded Figures Test (GEFT) to measure the individual's ability to locate (or in Witkin's terms, to disembed) a simple figure placed within one that is more complex. The EFT has been found reliable with a range from .61 to .92, subject to the individual's age and gender. Since field dependence/independence fluctuates throughout the lifespan, the EFT is impacted by age. The GEFT has been found reliable at a ratio of .82 (Jonassen & Grabowski, 1993). The individual's ability (or lack thereof) to locate the hidden figure determines whether the individual is field independent or field dependent. The level of success an individual has in locating the object within the larger field can be used to indicate the individual's degree of field independence. Conversely, the individual's inability to locate the embedded figures suggests a propensity for field dependence (Kahtz & Kling, 1999).

Recognizing the characteristics of both field dependent and field independent learners can help predict student satisfaction and academic success. A student who is field dependent tends to be "global, accepts structure, externally directed, attentive to social information ... interpersonal ... needs friendship, ... [and is] affected by stress" (Jonassen & Grabowski, 1993, p. 88). A student who is field independent tends to be: "analytical, generates structure, internally directed, inattentive to social cues ... intrapersonal ... reserved, aloof ... [and] ignores external stress" (Jonassen & Grabowski, 1993, p. 88). Luk (1998) described both types of learners:

Field independent students tend to be more analytical, logical, and better able to restructure and abstract subtle aspects of a problem, whereas field dependent students' social skills, attitudes, perception, qualities and feelings are strongly influenced by their physical and social background.

This may explain why field dependent students rely on others for information, guidance, and maintenance of attitudes. Field independent students appear to be less influenced by authority figures, social attachment and external standards and instead are guided by their own needs, standards and values. Field dependent students are likely to have a less defined sense of autonomy and independence than field independent students are. Moreover, they are unable to plan their own learning and have difficulty in maintaining their own direction. These differences are very important for students' academic achievement. (pp. 137–138)

The Impact of Field Dependence/Independence in the Classroom

Studies have indicated that tendencies toward field independence or field dependence can affect both classroom success and grade achievement. In addition, matching students' cognitive styles with instructors' teaching styles has a direct impact on grades achieved. Students who are field independent and whose teachers are field independent tend to receive the highest grades while students who are field dependent and whose teachers are field dependent tend to receive the lowest (Wieseman & Portis, 1990). This discrepancy can be attributed to what does not happen in the field dependent classroom when students are not required to think and integrate concepts beyond what they have received from the teacher.

Unlike other personality-related theories, an individual's preference toward field dependence or field independence may not be permanent and could change with age. For example, children tend to be field dependent while adults move toward field independence. Senior adults, however, often move back towards field dependence in learning (Jonassen & Grabowski, 1993).

In testing Witkin's theory, Luk (1998) found that students who were field dependent struggled with learning through distance education delivery systems. Field-dependent students were at a disadvantage when they were not in the same location with teachers. Kahtz and Kling (1999) found similar results when testing students who participated in computer-assisted instruction (CAI) courses. Students who participated in CAI courses were interviewed to determine how individual students connected to the course material and teachers. Field-independent students had the highest levels of success and satisfaction when involved in CAI courses, even though they preferred a more traditional classroom experience. However, field-dependent students questioned the benefits of CAI courses since they preferred to learn through discussion and personal interaction.

Witkin's field dependence/independence theory can be used to understand better the cognitive styles of teachers as well. One study of early childhood teachers found that the teacher's cognitive style determined both the development of course content and the selection of course methodology. Teachers who were more field-dependent developed less abstract course content and used teaching methods that required higher levels of interaction. Field-dependent teachers also expressed a higher level of satisfaction with student performance than field-independent teachers expressed (Pithers, 2002).

Implications of Field Dependence/Independence for Educators

As with other theories already presented, specific implications can be drawn from the research conducted by Witkin as well as other researchers. First, teachers can more effectively teach to both groups of learners by adapting their teaching strategies to include distributing detailed class notes and test reviews to all students. Research indicates that college students typically record less than 50% of the critical information that professors provide during classroom lectures. Since field-dependent students struggle both with note taking and testing, providing these resources can help these students more successfully focus on what the teacher believes is most important (Kiewra & Frank, 2001).

Second, field-dependent teachers will need to evaluate their course content and course methodology carefully to make sure that the needs of field-independent students are met. Since field-dependent teachers tend to rely heavily on class discussion, intentional effort should be made in providing opportunities for self-directed study as well. Self-directed study could include outside reading assignments, research papers, Internet research, student presentations of related information, and semester-long projects that are developed from course content areas.

Final Thoughts on Learning Style Theories

Helping students become effective in the educational process will move them toward becoming lifelong learners. One of the objectives of education is to help prepare students for continued study beyond the classroom. When students' learning needs and expectations are met and when students' learning experiences are stretched, learners will be more likely to continue the process of learning throughout their lifetimes.

Learning style theories can be helpful in maximizing learning for all students. The theories can help educators focus on both their personal strengths and weaknesses in the classroom and how these strengths and weaknesses will connect with the variety of learners they face. Learning style theories can be used effectively as a tool to help develop the skills of both teacher and learner.

However, learning style theories should not be used to judge student intelligence and abilities or to label learners. A great danger exists when learning style theories are misused. If educators are not careful, learning style theories will be used to predetermine student interest and success. Students will live up (or down) to those predetermined expectations. Instead, learning style theories should be used to help educators recognize the differences among students that are inherent in every classroom. Only when educators stretch their personal teaching styles to include a variety of teaching methodologies aimed at various types of learners will learning style theory positively impact classroom experiences.

Obviously, no teacher can incorporate all learning styles research into daily teaching approaches. So, what can a teacher do with this avalanche of information? Choose the learning style theory that makes the most sense to you personally. Work to strengthen the classroom experience based on what you have discovered through that theory. Celebrate even small successes, and do not be afraid to adapt failures and try them again. Students will appreciate your efforts.

Finally, the first article of this three-part series (see *CEJ*, Spring 2006) stressed the importance for Christian educators to use Jesus as their teaching model. Christian educators agree that Jesus used a variety of methods and experiences in His teaching ministry. The intent behind His methodology is even more important to consider.

Jesus was summarily concerned with His hearers and His message. Therefore, He willingly adapted His teaching style to fit the specific situation, matched His teaching method with the message He needed to communicate, and led His learners in moving from concrete experiences to abstract principles. Ultimately, Jesus taught to transform lives rather than to impart information. Should we, as Christian educators, attempt to do less? Developing knowledge of learning styles research can help Christian educators more effectively teach to meet individual learning needs as well as to transform lives.

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