Reflection on One's Own Teaching Style and
Learning Strategy Can Affect the CTE Classroom

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Abstract

Whether we are aware of it or not, many of our current teaching practices are not the most effective. Often times, teachers are not considering the audience within their classrooms when they establish their teaching practices; and because of this, students might find it difficult to comprehend or retain the information being presented. This work explores the concepts of becoming aware and reflecting on one's learning strategy and implementing that knowledge into one's teaching style. Specifically, this study focused on teachers in Career and Technology Education (CTE) classrooms; however, the issue is not limited to CTE content areas alone. Understanding the impact this work could have on student success may be applied to other disciplines as well.

Introduction

Career and technical education (CTE) is part of the United States secondary education system and has existed as a federally funded program, in various forms, since the passage of the Smith-Hughes Act of 1917. CTE has evolved over time from the more general vocational education courses of wood, metal, and auto shop to include topics such as criminal justice, education, and medical sciences (Gentry, Peters, & Mann, 2007).

The primary goal of teachers within CTE is to prepare students for postsecondary careers upon graduation from high school. Gray (2004) stated that,

>for students who (a) are at risk of dropping out of high school, (b) seek employment directly after high school, or (c) want to go to college at the one- or two-year level to prepare them for preprofessional technical careers, CTE is arguably the most important curriculum in the American high school. Together, these three groups make up a majority of all high school students. (p. 5)

Each CTE teacher is unique in many ways. Students with varying academic interests and abilities enroll in their classes with different learning preferences. Additionally, CTE teachers may enter the classroom with little or no professional educational background (Fritsch, 2013). While the authority for licensing teachers lies within each state, many school districts have been forced to explore alternative methods for teaching certifications. The Bureau of Labor Statistics (2014) indicated some states and school districts have recruited individuals directly from business and industry to help address CTE teacher shortages. While many of these individuals have extensive work experience in a related occupational field, they are likely to have only a high school diploma, associate degree, or a bachelor's degree in a non-teaching academic discipline. They have rarely been given any training on teaching methods or classroom assessment.

However, as Knowles (1970), Muijs and Reynolds (2011), and Stronge (2007) noted that the teacher is the most important variable in the classroom for student achievement; secondary CTE teachers must find a way to overcome educational shortcomings and address the unique learning preferences of their students.

One way to make a difference in the success of their students is for teachers to identify their own teaching style, and then implement classroom practices related to that style while creating an environment conducive to the different learning styles of their students. "Knowledge of teaching style can make a difference in how teachers organize their classroom, how they deal with learners, and how well their students do in the learning content" (Conti, 1989, p. 3).

The desirability of identifying a teacher's learning preference directly relates to "a teachers' own experience of learning as learners and to their experience as teachers in schools teaching others" (Lawrence, 1997, p. 160). Additionally, by making teachers aware of how they learn "two things can be established, (a) that learning is a process, and (b) people learn in different ways" (Lawrence, 1997, p. 160). Considerable research supports the view that when students' learning preferences match their instructor's teaching styles, student motivation and achievement usually improve (Miller 2001; Stitt-Gohdes 2001). However; according to David Kolb, educational theorist, "it is more effective to design curriculum so that there is some way for learners of every learning style to engage with the topic, so that every type of learner has an initial way to connect with the material, and then begin to stretch his or her learning capability in other learning modes" (Delahoussaye 2002, p. 31). Zhang, Sternberg, and Fan (2013) recommended that teachers should teach for a diverse and balanced use of learning styles to ensure all students can benefit from the teaching, irrespective of their learning style. Therefore, the purpose of this study is to explore the concepts of teaching styles and learning strategies and to encourage CTE educators to reflect on their own teaching style and learning strategy and implement that knowledge into their classroom.

Literature Review
Most human behavior is learned; therefore, it is important to investigate the principles of learning to understand why humans behave the way they do. Moreover, there is a close relationship between the principles of learning and educational practices. In many circumstances, principles that have been uncovered while studying the learning process in the laboratory have been eventually utilized in the classroom. The current trend in American education toward individualized instruction can be considered a spin-off from research on the learning process. Educators may reasonably conclude that as knowledge of the learning process increases, educational practices should become more efficient and effective (Hergenhahn & Olson, 2005).

Teaching Impact

Teaching
Teachers have complicated and difficult jobs. "They have to consider many sources of knowledge and explanation, take into account their specific classroom situations and students, and determine when and how various ideas can inform their practice" (Darling-Hammond, Rosso, Austin, Orcutt, & Martin, 2003, p. 20). However, documents such as the Nation at Risk (1983) have argued that teachers have been doing an unsatisfactory job in educating the children of this country, and the No Child Left Behind (2006) legislation further emphasized the same sentiment by mandating all teachers be highly qualified and held accountable. This leads to the question, is there a lack of quality among teachers in the profession?

Contemporary educational reform movements such as this have challenged educational professionals to raise the level of academic rigor thus preparing students with the knowledge, abilities, and skills necessary for post-secondary education and successful entry into the competitive global workforce (Cannon, Tenuto, & Kitchel, 2013). Based on this data, federal and state legislators who have little to no background in education are writing and implementing policies regarding what teachers must do and competencies they must attain. The negative attacks continue because teachers, as a group, are not able to clearly state their beliefs about teaching. Educators need to clearly express their position on the following types of questions: What is their view on the nature of the learner? What is the purpose of the curriculum? What is their role as a teacher? What is their mission in education? Until teachers "are able to clearly articulate their position on these types of questions," they "will remain open to attack" (Conti, 2015, p. 75).
To counteract this attack upon teaching and to regain control of their own profession, educators must have the freedom to identify their own teaching style and reflect on their beliefs about what constitutes good teaching, personal preferences, their abilities, and the norms of their particular discipline (Pine, 2009). Conti (2015) stated, "Such an assessment will pinpoint their specific classroom practices and relate them to what is known about teaching and learning" (p. 19). This reflection can lead to the implementation of classroom practices that are related to that teaching style while creating an environment conducive to the different learning styles of their students. "Knowledge of teaching style can make a difference in how teachers organize their classroom, how they deal with learners, and how well their students do in the learning content" (Conti, 1989, p. 3).

Teaching Style
There are many ways to conceptualize teaching style. However, much of the research suggests that there are two primary, fundamental teaching styles: (a) learner-centered, and (b) teacher-centered (Conti, 1985, 1989; Ahmed, 2013). Lasry, Charles, Whittaker, Dedic, and Rosenfield (2013) and Tomlinson (2015) suggested the effective use of technology-enhanced environments and addressing the needs of diverse student populations requires the adoption of learner-centered active learning approaches. However, adopting a new pedagogy seems difficult for some teachers. The teacher-

centered approach assumes the learners are passive and that they become active by reacting to stimuli in the environment. The learner-centered style of teaching refers to a "method of instruction in which the authority for curriculum formatting is jointly shared by the learner and the practitioner" (Conti, 1985, p. 7).

The main purpose of teacher-centered style is to transmit knowledge. It is characterized by using a traditional skilled teaching technique to convey a selection of knowledge to learners (Jarvis, 2010). Lecturing is the primary means of controlling the learning environment, although other means can also be used to maintain control of the learning environment. Historically, instructors were seen as the main source of knowledge and authority (Marra, 2005; Wenglinsky, 2000). Outcomes are evaluated by the learner's ability to reproduce a selected portion of material and are reinforced by the instructor's approval through good grades.

In the classroom, learner-centered education focuses upon the individual learner rather than on a body of information. Piaget's theory stressed the constructive nature of learning referring to the idea that all students attempt to interpret their work based on their skills, knowledge, and developmental levels (Darling-Hammond & Bransford, 2012). Subject matter is presented in a manner conducive to student's needs and to help students develop a critical awareness of their feelings and values. Freire (1970), Knowles (1970), and McCombs (2001) argued that curriculum should be learner-centered, that learning episodes should benefit from learner's experience, and that the teacher should serve as a facilitator rather than a lecturer of facts. This learner-centered, student-active instruction – often called constructivism – affords students opportunities to explore ideas and construct knowledge based on their own observations and experiences (Smerdon, Burkam, & Lee, 1999; Ahmed, 2013).

Pedagogical Framework for Career and Technical Education Instruction
Since the Smith Hughes Act of 1917, the implicit learning theory underlying the curriculum and pedagogy of Career and Technical Education (CTE) has been behaviorism as practiced in the classroom and laboratory (Dobbins, 1999). Many scholars in the CTE profession have advocated changes that implicitly relied on cognitive principles (Doolittle & Camp, 1999). This cognitive approach revolves around the idea of constructivism and the learner-centered approach to teaching. "What sets CTE apart from other academic area is its focus on the application of knowledge and the creation of in-depth understanding to solve problems" (Drage, 2009, p. 34). The pedagogy shift has required teachers to reflect on their own teaching style and the learning style of their students (Doolittle & Camp, 1999).

Teachers often feel that a teacher-centered teaching style is the most expeditious method for covering a large volume of material without considering student's learning style preferences (DiMartino, Clarke, & Wolk, 2003). However, Stitt-Gohdes (2001) stated "for students to reach higher standards and learn more effectively, learning situations that are best for students need to be developed and encouraged" (p. 1).
Teaching styles and profiles are likely to be quite different among teachers in a given school due to numerous variables. Students also vary, by age, aptitude, degree of

socialization, cognitive styles, preferred methods of learning, etc. Thus, it is important that all teachers be aware of these differences, and it is critical that they understand there are various learning strategies for both teachers and students.

Learning Strategy
The term learning style only began to appear in the learning literature in the 1970s. One of the reasons for the emergence of the term is that learning style has a practical application, particularly in education and training. There is general acceptance that the manner in which individuals choose to or are inclined to approach a learning situation has an impact on performance and achievement of learning outcomes (Canfield, 1992).

While knowledge of learning styles can help instructors better understand learners and "have important implications for program planning, teaching, and learning" (Smith, 1993, p. 24), they are not something that an instructor can teach to a learner because they are inherent within the learner. This has led educators to the concept of learning strategies (Conti, 2009). "They differ from learning style in that they are techniques rather than stable traits and they are selected for a specific task" (Fellenz & Conti, 1989, p. 7). Therefore, "knowing the kinds of learning experiences that students most value may help instructors develop alternative course structures that provide a better fit between their instructional goals and the learning style preferences of their students" (Canfield, 1992, p. 1). The implementation of different learning strategies requires a shift in the paradigm for learning as well by increasing the student accountability significantly (Frame, et al., 2015).

Inclusion in Career and Technical Education
Career and Technical Education classes have always been popular among special needs students because of the nature of CTE content, essentially its focus on functional life and vocational skills. Cross, Cantwell and Summers (1993) stated, "the broadly based; holistic human ecology approach to home economics provides opportunities for educators to contribute to eliminating discrimination based on disability" (p. 33). Indeed, the special education area of career education interfaces well with the concepts, content, and curriculum of CTE (Clark & Kolestoe, 1995).

The very definition of inclusion clarifies teaching as the delivery of services to students with special needs in regular classroom settings. In an inclusion classroom, many levels of academic ability are represented. For a teacher to best serve his/her students, a teacher must recognize their method of delivery and the learning preferences of the students. Students with special needs are just that, needs that require accommodations to the learning environment (Gal, Schreur, & Engel-Yeger, 2010; Gold, 1980). For this population to succeed, teachers need to be cognizant of their method of deliver and the various learning capacities of their students in order for mastery of the material to occur (Mahadevan, Grenwelge, & Peterson, 2014). However, most CTE teachers have no understanding or training regarding how to manage a regular classroom that includes students with special needs.

Identifying issues with teaching styles and learning strategies could be added to teaching preparation programs to allow current and pre-service teachers to reflect and modify their teaching practice. Inclusion of students with exceptional learning capacity and teachers lacking basic pedagogical knowledge are factors that will create barriers to successful classroom practices.

Conducive Learning Environment: The Need to Study Learning
Most human behavior is learned; therefore, it is important to investigate the principles of learning to understand why humans behave the way they do. Moreover, there is a close relationship between the principles of learning and educational practices. In many circumstances, principles that have been uncovered while studying the learning process in the laboratory have been eventually utilized in the classroom. The current trend in American education toward individualized instruction can be considered a spin-off from research on the learning process. Educators may reasonably conclude that as knowledge of the learning process increases, educational practices should become more efficient and effective (Hergenhahn & Olson, 2005).

Learning How to Learn
Learning-how-to-learn is a difficult concept to define with precision (Smith, 1976). Robert M. Smith developed a theory of training founded on the idea that it is "as important to teach adults how to learn as it is to specify particular domains for learning (Brookfield, 1991, p. 64). Initially Smith defined learning-how-to-learn as "a matter of the adult's having the knowledge and skill essential to function effectively in the various learning situations in which he finds himself" (p. 5). Later Smith (1982) defined learning-how-to-learn as "possessing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation one encounters" (p. 19). Critical to this process is the development of each learners' awareness and capacity for effective self-monitoring through instrumented learning and active reflection (Smith, 1991).

Instrumented Learning
While researchers generally prefer to observe behavior directly, practical and ethical consideration sometimes necessitate self-reports by individuals (Leary, 2011). Self-reports are individuals' "reports of how they behave" (p. 80). More specifically, "self-reports may provide affective, behavioral, or cognitive information about individuals" (p. 52). People self-reporting on themselves using an instrument is an essential way of gathering "information no one else knows" about people (Baldwin, 2000, p. 3); it may be the only source of information (Kurtzman, 2000). Therefore, self-reported information or data is needed to investigate important issues not otherwise available with other measures (Critchfeild, Tucker, & Vuchinich, 1998; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

A learning instrument is a set of "tactical instructions that enable the learner to learn without a teacher" (Mouton & Blake, 1984, p. 60). In other words, learning instruments provide adult learners with metacognitive references for reflecting upon their

experiences. Thus, the instrumented learning process is analogous to the learning process of reflective practice.

Reflective Practice
Professional learning is often a result of reflecting on practice (Cervreo, 1988). Reflecting on practice involves individuals thoughtfully considering their own experiences when applying knowledge to practice (Loucks-Horsley, Stiles, Mundy, Love, & Hewson, 2009; Pedro, 2006; Schon, 1987). Schon (1983) believed that reflective practice must be a definite part of continuing education. Continuing education programs should be a place where "practitioners learn to reflect on their own tacit theories of the phenomena of practice, in the presence of representative of those disciplines" (Schon, 1987, p. 321) related to their own practice situations (Cervreo, 1988, p. 44). For educators to know and then reflect upon their learning strategy and teaching style can prepare them to more effectively apply these learning principles (Conti & Kolody, 2004); this in turn can lead to more reflection. In Broyles, Epler, and Waknine's (2011) study, participants were able to identify and reflect on their negative teaching attributes and were able to improve for the second round of teaching experiences by modifying lesson plans.
Research has shown that the teacher is the main reason for a student's success (Fox, 2009; Knowles, 1970). It is important for them to understand and reflect on their own teaching style and learning strategy for students to be academically successful. Parents, education leaders, government, and the American public are calling for every teacher to be accountable for each student.

Conclusion
Research indicates that most students do not learn well when an instructor uses a passive teaching method and is the principle disadvantage of the teacher-centered approach. Critical thinking, an essential skill for CTE students, does not develop well in this passive learning environment. Changes need to be made so that CTE teachers adopt a more learner-centered approach to teaching. Individuals who are committed to the teacher-centered teaching style should review the concepts of self-identifying learning preferences, teaching style, and learning strategies. These principles need to be communicated to CTE teachers, university professors, and trainers who prepare CTE teachers. University professors and other educators should provide instruction and guidance on the importance of becoming aware and reflecting on one's learning strategy and teaching style. This would include instruction on how to create a learner-centered classroom through instructional strategies and curriculum activities. CTE teachers need to incorporate instrumented learning into their professional development. Knowledge of one's learning strategy preference creates an awareness of how one learns best and the importance of incorporating differing instructional strategies to accommodate all learning preferences of students.

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