ADULT LEARNERS AND THE DIALECTICAL PROCESS: A VALIDATING CONSTRUCTIVIST APPROACH TO LEARNING TRANSFER AND APPLICATION

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Abstract

This article will address the theoretical, conceptual, and the consequent application strategies involved in operationalizing dialectical curricular designs appropriate for adult learners. In particular, the concepts of constructivism, andragogy, experiential learning, and transformational learning will serve as the foundational philosophical and theoretical concepts that can inform and complement a dialectical learning framework. The article will assert that dialectical discourse methods can serve as validating mechanisms for the exchange of ideas and concepts, to use and affirm students' personal and professional experiences, to create a community of learners, and to fulfill the need of continual change in adult learners' knowledge, skills, and attitudes.

Introduction

As a consequence of globalization, continuous technological innovation, and demographic population shifts occurring internationally (Karoly & Panis, 2004), the early 21st century adult learner must expect to be more committed to what is now termed as "lifelong learning;" this presumably to remain viable in a world increasingly requiring cross-cultural competence and more frequent updating of our knowledge, skills, and attitudes (KSA). Adult learners, particularly in the developed world, are especially concerned about this new and accelerating global phenomenon, given that they are increasingly competing with a global talent pool (Florida, 2006). Indeed, accessibility and affordability of education, training and development opportunities for adult learners is one of the most critical issues affecting social and economic stability in contemporary societies (Merriam & Caffarella, 1999; Fukuyama, 2002).

Accessibility and affordability of relevant training and higher education opportunities certainly are not the main challenges encountered by adult learners. Adult learners, once enrolled in liberal arts education or career and technical training programs, face a myriad of challenges as they attempt to assimilate new KSAs required in 21st century social and occupational settings. For instance, whether encountered at a community college, in a degree completion program offered through a four-year liberal arts college, or a traditional university program setting, adult students often engage their education within curricular forms and content that are still largely tailored more for traditional-age students. Far too often, the instructional strategies used with adult students are informed largely by a "pedagogical" teaching paradigm, often defined as the art and science of teaching children. The student, regardless of age, it is assumed is lacking in pertinent knowledge and remains passive while the instructor dispenses a monologue about the subject matter at hand. This often leads to instructor frustration, in that, lecture content delivery does not necessarily achieve crucial transfer of learning (Lang, 2006), much less personal transformation.

Conversely, "andragogical" curricular methods, characterized as the art and science of teaching adults (Knowles, 1984), informs yet a different teaching and learning paradigm, one where students' needs, knowledge and experience largely dictate what the form and content of the curriculum will offer; the instructor is simply a "facilitator" attempting to achieve, not necessarily professional parity with his or her students, but an egalitarian relationship with students regarding learning objectives (Howell, 2001); ultimately, adult students are to be self-directed learners (Knowles, 1984; Brookfield, 1984). Emerging adult learning theory has also been informed by Kolb's (1984) experiential learning constructs. Not only must adult students' knowledge and experience be brought into the classroom discourse, but it is within for instance, real-world case-study assignments in the classroom, where exchange between students and their instructors generate new understanding as a consequence of their experiences together. Indeed, Knowles (1984) asserts that the curriculum must create a classroom attitude of mutuality between teachers and students as joint investigators. But, what form of curricular structure lends itself to an organized exchange of experience, knowledge, and ideas likely to bring about a better transfer of learning among adult students?

This article will argue that, centered within the constructivist tradition, by applying a dialectical curricular framework (thesis, antithesis, synthesis), adult educators can achieve relevant transfer of learning, indeed meaningful transformation, among adult

students. This framework can facilitate the exchange between old and new understandings, challenge and/or affirm existing paradigms, and create new knowledge and application to students' personal and occupational lives.

In addition, the argument is also made that crucial to this learning process is that the instructor assume the role of, not the sage on the stage, but a subject matter expert by incorporating adult-appropriate pedagogical teaching strategies, when addressing foundational content knowledge, at critical junctures during the course. According to Cross (1981), should an educator seek to know how to help a student learn, in general "he needs to know how teachers should behave in order to facilitate learning" (p. 227). In particular, according to Lang (2006), students "need a strong factual and conceptual foundation in order to work effectively in groups or hold intelligent discussions or solve problems" (p.2). In essence, the instructor must be viewed as an expert in their field, not simply a facilitator of divergent views, to establish and maintain the credibility required of leaders. The point is often made when recruiting adult students to various degree programs that the faculty offer, not only academic credentials, but "real-world" experience that enhance the learning objectives.

Certainly not a new concept but, instructors employ both adult-appropriate pedagogical and andragogical teaching methods (form), but apply a dialectical process to encourage and incorporate students' knowledge, ideas, and experiences into the curriculum (content) in an effort to create a heightened sense of commitment on the part of students, a richer and deeper classroom discourse, and improved transfer of learning. The Constructive Dialectical Curriculum Model conceptualizes this idea.

The following literature review will begin with a brief treatment of foundational learning theories including behaviorism, constructivism, and the origins and purpose of Hegelian dialectics. Next, the review establishes the theoretical foundations of adult learning theorists including the works of Knowles (1984) and Kolb (1984). Particular attention will also be given to transformational learning theory advanced by Mezirow (2000). In the final section, each of the major theorists discussed are aligned to coalesce their contributions in support of the Constructive Dialectical Curriculum Model.

Literature Review

Before placing the three foundational theories within the context of adult learning theory, defining their basic meaning is necessary. Two major theories inform pedagogical and andragogical learning theory and practice: behaviorism and constructivism, the latter being a branch of cognitive theory. Behaviorists assert that learning can only be assessed through direct observation; positive and negative reinforcement feedback is necessary for learning, and unlearning. Behaviorism seems more appropriate to understanding how younger students can learn (e.g., cognitive and affective learning), but may be applicable to adult learning objectives as in the case of psychomotor skills development (Cross, 1981). Behaviorism, then, is largely concerned about specific visible learning outcomes; constructivism, on the other hand, concerns itself with creating an environment where a learning process can proceed creatively and productively.

Contructivism

Constructivism stems from cognitive learning theory and it was cognitive psychologists who first rejected behaviorists' earlier claims about relying too much on overt individual behaviors to explain changes and learning, which was usually assumed to occur passsively. Cognitive learning theorists instead argue that a thinking individual interprets "sensations and gives meaning to events that impinge upon his conscience" (Grippin and Peters, 1984, p. 76). Constructivism, therefore, is essentially "a search for meaning…Knowledge is not simply 'out there' to be attained; is it constructed by the learner" (Baumgartner, 2003, p. 2). Merriam and Caffarella (1999) assert that "constructivists differ as to the nature of reality, the role of experience, what knowledge is of interest, and whether the process of meaning making is primarily individual or social" (p. 261). It is individual in the sense that meaning making is based on a student's "previous and current knowledge structure" (p. 261) and occurs independently. Social constructivism, on the other hand, occurs when "individuals engage socially in talk and activities about shared problems or tasks." Meaning making is therefore a "dialogic process involving persons-in-conversations, and learning is seen as the process by which individuals are introduced to a culture by more skilled members" (Driver et al., 1994, p. 7), as in the case of subject matter experts. Constructivist dialogical processes often complement and inform dialectical epistemologies and, in particular, Hegel's dialectical framework can serve as a model.

The Hegelian Dialectic

The term *dialectics* is used in many variations (e.g., Socratic dialectic, transcendental dialectic, dialectical materialism), but has its roots in Plato's dialectic method of cross-examination used in support of his philosophical positions; the Greek translation defines it simply as, the art of conversation. Hegel (17..) extended Plato's dialectics and created more of a discourse framework, whereby a current *thesis*, can be challenged by a contradiction or *antithesis*, with the resultant inherent tension tending to produce a *synthesis* on, usually, a complex multi-dimensional matter. Merriam and Caffarella (1999) argue that what must become a part of adults' ways of thinking is dialectical information processing. Indeed, dialectical thinking "allows for the acceptance of alternative truths and ways of thinking…" (Merriam and Caffarella, 1999, p. 152). As such, the purpose of a dialectical approach to curriculum design is to create a validating mechanism framework, wherein student-peers and their instructors engage in conversation or disputation within intentional, logical, and constructivist learning environments; this approach essentially serves as a learning blue-print about what students have to offer in the dialog, what unknown areas or contradictions they have yet to consider, and where they might arrive intellectually in the educational experience. New discoveries and knowledge bases are then recycled back into students' personal and occupational worlds.

While constructivism can set forth one of the central philosophical foundations to adult learning methods, Hegel's dialectic provides a validating mechanism for discourse and debate. Next, we explore how andragogy helps to explain many of the inherent variables necessary for individual constructivism, and secondly, how experiential learning theory can create an environment whereby social constructivism can occur among adult students. Understanding the basic psycho-social dimensions of adult

students who are poised to learn is crucial; Knowles's work on andragogy can begin this process and seems to complement and inform a dialectical curricular structure.

Knowles' Andragogy

        The term "andragogy" was originally termed by German teacher Alexander Kapp in 1833 to explain Plato's idea that individuals continue learning into adulthood (Baumgartner, 2003). The term was used more widely in Europe before Malcolm Knowles popularized it in the United States beginning in the early 1960s. Andragogy is defined simply as "the art and science of helping adults learn" (Knowles, 1984, p. 43). This construct offers five assumptions about adult learners: (1) adult students must transition from dependent learning towards self-directed learning; (2) adults' greater reservoir of experience can be used as a learning tool; (3) adults' readiness to learn is based on actual social roles; (4) adults need to apply new knowledge and skills immediately (task-centered); and (5) adults are internally, versus externally, motivated about learning new things (Knowles, 1984, 1990).

        Criticism has been lodged against andragogy however, in that, it was not quite clear if it stood for a theory of learning or teaching, or if it qualified as a theory at all (Hartree, 1984); theories must have a credible level of predictability. Indeed, St. Clair (2002) agrees that andragogy may not qualify as an adult learning theory because it fails to clarify "how and why people learn" (p. 2); Knowles' assumptions 2 through 5 seem to refute this claim at some level however. Originally, Knowles (1970) argued that andragogy would essentially replace the need for pedagogical learning approaches. In the aftermath of some criticism, Knowles (1980) clarified his original claims by postulating that human development may actually occur along a continuum, from pedagogy to andragogy. Cross (1981) disagrees arguing that this continuum does not truly exist since subject-centered learning and problem-centered learning tend to "appear more dichotomous in nature" (p. 225). Moreover, Delahaye, Limerick, and Hearn (1994) argue that students can fit in differing categories; they may be either low pedagogy/high andragogy or high pedagogy/low andragogy. Nonetheless, Merriam and Caffarella (1999) assert that, for practitioners who work with adult learners, andragogy can "be a helpful rubric for better understanding adults as learners" (p. 277/8), be viewed as a more humanistic approach addressing adult education, or as Knowles (1989) cited "as a basis for an emergent theory" (p. 112). Yet, while Knowles's (1984) work on andragogy provides a bases for beginning to understand *how and why* adult learners can experience a form of individual constructivism, Kolb (1984) believed that new experiences could be created and used as a source for new learning and development among adult learners (social constructivism); this can be possible by recognizing and leveraging the contributions of different learning styles experienced through different discourse options.

Kolb's Experiential Learning Construct

        Kolb's (1984) work on experiential learning can be associated to a dictum postulated by Confucius, 'Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand' (http://www.reviewing.co.uk/research/experiential. learning.htm#2). Indeed, Kant (1788) begins his work entitled *Critique of Pure Reason* by asserting that all human knowledge stems from experience. Kolb (1984) defines experiential learning as "the process whereby knowledge is created through the

transformation of experience" (p. 41). He further clarifies experiential learning encounters by asserting their constructivist nature, in that, it is "a process, not an outcome; that learning is best facilitated when students apply their own beliefs and ideas to a topic" (Chaves, 2006, p. 149). Indeed, adult students' experiences, knowledge, ideas, and beliefs applied to practical activities, accomplished within a group or team-based context, often create opportunities for transformational experiences and the consequent new learning.

Kolb's (1984) experiential learning theory offers four dialogical discourse learning stages whereby philosophical, ideological, theoretical, and practical subject matter issues can be discussed, debated, and assimilated where appropriate; each of the four discourse experiences can be considered learning styles, or strengths, resident among many, but not all adult learners. They include: concrete experiences, reflective observations, abstract conceptualization, and active experimentation. *Concrete experiences* can include the analysis and discussion of article-based issues, textbook readings, lectures, guest lectures, guided discussion experiences, Internet-based learning; *reflective observations* can include group discussion, free-writing, and brainstorming exercises; *abstract conceptualization* involves self-direction and the freedom to hypothesize about subject matter; and lastly, *active experimentation* involves the use of the case-study method concerning real-world examples for new learning and application. Indeed, these are the learning contexts whereby many students can engage "socially in talk and activities about shared problems or tasks" (Driver et al. 1994, p. 7).

While Kolb's (1984) work on using new experiences as a source of learning and development accords a four-stage constructivist learning approach, some criticism has also be lodged against his work. For instance, Forrest (2004) argues from a training perspective that there are a variety of processes which can occur all at once and that some of Kolb's learning stages can be left out completely. Moreover, she states that the inventory was tested and developed within a Western-centric context, essentially leaving out non-Western cultural ontologies. Although, Chaves (2006) argues that Kolb's four-stage experiential learning model can apply within group-based cultures, as adult learners have proven in some Southeast Asian contexts. Nonetheless, Rogers (1996), while admitting that Kolb's experiential learning theory has refocused learning back onto the student, posits along with Miettinen (2000) that the inventory's results are based solely on the way learners rated themselves and not in relation to other adult students in their learning environment, which serves to enhance reasoning and learning outcomes. Ultimately, Kolb (1984) posits that "It is more effective to design curriculum so that there is some way for learners of every learning style to engage with the topic. Curriculum design should follow the learning cycle of experiencing, reflecting, thinking and acting …an initial way to connect with the material and then begin to stretch his learning capability in other learning modes" (http://www.learningfromexperience.com/faq). Indeed, Cross (1981) citing Perry's (1970) work on intellectual development in college, writes "The role of the teacher (or facilitator)…is to help the individual advance to the next level of cognitive development through designing educational experiences that will challenge the learner to 'reach' for growth-enhancing cognitive experiences" (p. 231). Often times, growth enhancing cognitive experiences actually engender productive personal and social transformation on the part of adults. Mezirow's (2000) model on transformative learning elevates the discussion, from one based on the need and

importance of transactional forms of learning processes, over to one where the consequent personal transformation on the part of students can actually lead to wider, positive social transformation.

Mezirow's Theory on Transformative Learning

Whereas Knowles' work on andragogy and Kolb's work on experiential learning enlightens the discussion about adult learner characteristics and learning styles and the accompanying discourse methods, respectively, Mezirow's (2000) work on transformative learning goes deeper into the cognitive and affective nature of understanding who is, as Hegel described it, the "other." Mezirow's theory about transformative learning was predicated on Habermas's (1984) communicative learning theory. Essentially, communicative learning theory asserts that understanding what an individual communicates goes beyond their spoken words. According to Mezirow (2000), what is also necessary to the constructivist meaning making process is understanding a speaker's feelings, intentions and assumptions; this is when transformative learning can occur.

Although informed by Habermas, Mezirow's (2000) empirical work was primarily based on the experiences of women re-entering higher education after having been out of a formal learning process for a time. Mezirow's (2000) model offers a ten-step ontological change process which emphasizes critical reflection and in "reflective discourse" (p. 11). Baumgartner (2003) describes the process as "talking with others – in order to arrive at a perspective transformation or change in world view," which can happen suddenly or in a gradual sense (p. 19). The ten-step transformative process generally involves the following steps: an individual will experience (1) a disorienting dilemma; (2) followed by fear, guilt, shame or anger; (3) subsequent critical reflection; (4) a reaching out to others undergoing similar experience(s); (5) the exploration of new relationships, roles or courses of actions; (6) planning a particular course of action; (7) gaining the necessary knowledge, skills or attitudes for implementing the chosen course of action; (8) implementation of a new role on a provisional bases; (9) realizing confidence in the new role; and (10) reintegration into life based on new conditions, informed especially by one's new perspectives. Baumgartner (2003) writes that, basically, transformative learning's main ingredients include experience, critical reflection, and reflective discourse; the latter enables individuals to "challenge each other's assumptions and building consensus" (p. 20).

Criticism has also been registered against Mezirow's (2000) work on transformative learning. Baumgartner (2003), drawing from Collard and Law's (1989) original questioning of Mezirow's epistemological assumptions, writes that Mezirow's work on transformational learning is incomplete simply because it's focus is centered only on the individual, to the exclusion of the socio-political context. Although, some would argue that Mezirow (2000) is advocating for an individual constructivist form of experience. Nonetheless, other critics argue that culture (e.g., race, class, and gender) and context are important variables to recognize as having an impact on the transformative learning process (Taylor, 1998). Indeed, Caruth (2000), citing the experiences of Black men attending the Million Man March in Washington DC, posits that Mezirow's work does not address, in particular, racial group identity dynamics in the transformative learning process.

The foregoing literature review can thus serve to establish the philosophical, theoretical, and metaphysical aspects necessary for informing and constructing a valid curricular design appropriate to adult learners undergoing academic, occupational and/or professional training. While a forgone conclusion, in humans' constant pursuit for new knowledge, updated skills, and attitudinal changes, it becomes quite obvious that adult learners carry more advantages concerning KSAs due to their personal and occupational experience levels. However, disadvantages or challenges also exist in that since older individuals are "more set in their ways," unlearning outdated knowledge, skills, attitudes or expectations can pose a challenge to themselves and those teaching for and facilitating among adult students. As such, adult learners' ability to engage ontological contradictions may require a more intentional, multi-stage process whereby new ideas can be explored and assimilated at some level, especially with the aid of communal reflection. So how can understanding Knowles' work on andragogy aid in the initiation of a dialectical process appropriate to adult students? Moreover, how can an experiential learning curricular model serve the purposes of a *dialectical antithesis* process which is designed to amend or dislodge outdated KSAs with new understanding? Using a dialectical discourse model, can the necessary synthesis occur in the classroom and how? Does transformational learning occur within all students, and if not, why? As Driver et al. (1994) assert, at the core of constructivist instructional (curricular) approaches lie in operationalizing "practical activities supported by group discussions" (p. 6). It is in this epistemological context, in classroom, workplace, or virtual environments, wherein the student enters into community to achieve intellectual synergy and transformational changes related to their KSAs, which impact their social and occupational contexts.

If the Hegelian dialectical framework can serve as the overall validating mechanism recipe among students and their instructors, what specific curricular ingredients can we use in the classroom to bring about positive learning synthesis, indeed, positive personal transformation? To begin answering the foregoing questions, we next turn to a discussion on andragogy's relation to the dialectical thesis, the dialectical antithesis' relationship to experiential learning curricula, and its impact on transfer of learning for personal and socio-occupational transformation. However, we begin with a basic description of the Constructive Dialectical Curriculum Model, which serves to conceptualize the entire curricular concept.

A Dialectic Model's Impact on Andragogy, Experiential Learning, and Transformational Learning

Constructive Dialectical Curriculum Model

Specifically, the *Constructive Dialectical Curriculum Model* suggests that adults bring unique personal and occupational knowledge, skills, and attitudes (KSA) to the educational process. Once inside of a learning context, the adult learner engages in adult-appropriate pedagogical and andragogical curricular exercises which draw out, affirms, and utilizes their personal and occupational KSAs, leverages their readiness to learn new things, and enhances their motivation, in order to launch new and often challenging ontological and learning paradigms. Next, the instructor, or facilitating subject matter expert, helps the class to begin the transition from a thesis understanding (current paradigms) over to the antithetical learning position. He or she will use experiential

learning curricular strategies to attempt to bring about a synthesis regarding the subject matter at hand. Even before synthesis has been reached, students have been able to begin to cycle new understanding back into their personal and occupational lives. However, it is only until complete synthesis has been achieved that students can cycle the best new understanding back into their personal and professional lives. This recursive learning process begins by recognizing some of the assumptions andragogy contributes to in initial stages of a dialectical learning process.

Andragogy and the Dialectical Thesis

   If the Hegelian dialectic can provide a validating mechanism framework, or discourse framework, for a teaching and learning exchange among adult students, deploying most andragogy's assumptions about their knowledge and experience base is crucial. What is useful for our purposes is the acknowledgement that andragogy's assumptions 2, 3, and 5 inform the starting point, or *thesis,* of a dialectical adult learning model. Again, affirming and utilizing students' prior knowledge and experience as a learning resource (assumption #2) in the initial, and latter stages, of a dialectical discourse is credible, since "meaning is made by the individual and is dependent on the individual's previous and current knowledge structure" (Merriam and Caffarella, 1999, p. 261). With regards to assumption # 3, adults' readiness to learn can largely be based on an individual's social and occupational role, or "what knowledge is of interest" (Merriam and Caraffella, 1999, p. 261); Baumgartner (2003) writes, for instance, that "when Sara enters her company's Japanese headquarters, she is probably more interested in learning job expectations and workplace culture than knowing about the history of the company or retirement plans" (p. 7). Assuming Sara is undergoing a new employee orientation, due to her starting a new position in the human resource development department (HRD), applying this new knowledge as soon as possible is in her best interest; it can also speak to her level and type of motivation (assumption # 5). Previous knowledge, experience, personal interests, and a readiness to learn something new about Japanese organizational culture, prepares Sara for a new set of propositions (antithesis) that will challenge her pre-existing notions, assumptions, and expectations concerning Japanese organizations; experiential learning discourse options can help manage the discovery or meaning making process.

The Dialectical Antithesis and Experiential Learning

   An *antithesis* has been defined as "an equally assertible and apparently contradictory proposition" (Randon House, Webster Dictionary, 1999). As technology, knowledge, and culture are not static, apparent contradictions will always arise to challenge, or enforce, knowledge, ideals, or expectations that were designed to ensure the pursuit of, among other things, "happiness." Indeed, according to Merriam and Caffarella (1999), in response to "life's inherent contradictions and complexities,…dialectical ways of thinking must become a part of the ways adults think" (p. 151). One sobering example applies to the American experience; for instance, if according to the Declaration of Independence all men are created equal (thesis), then why were others under the yoke of slavery (antithesis)? One of the crucial aims of individualist constructivist teaching approaches is to "induce cognitive conflict and hence encourage learners to develop new knowledge schemes that are better adapted to

experience. Practical activities supported by group discussions form the core of such pedagogical practices" (Driver et al., 1994, p. 6); the latter activity completes the learning process through social constructivism. As such, antithetical propositions produce the necessary cognitive dissonance for the individual to begin to reconsider, or change, attitudes and consequent behaviors, but it occurs more comprehensively within a communal experiential learning context where debate, disputation, and reflection can occur more effectively. If a dialectical curricula can serve as a blue-print for constructing a new cognitive learning structure, then experiential learning constructs serve to define actual dialogue specifications that can often lead to the development of positive learning synthesis among adult learners.

In general, experiential learning begins when, for instance, Sara and her student peers undertaking a human resources development course and guided by an instructor, discuss an article(s) about Japan's changing "social compact" emerging between employees and their employers. According to Dunfee and Yukimasa (1993), the *Ethics of Reciprocity* applied in Japanese organizations required that a balance between benefits and sacrifices be made. Indeed, it had been the case (thesis) since the end of WW II that, due to the close relations between the private and public sectors in Japan, domestic firms were able to offer life-time employment to their employees; globalization and an aging workforce is changing this employment arrangement, and at a deeper level, impacting the longstanding cultural assumptions about work, thus creating a seeming contradiction (antithesis) for many within and without Japanese society. Next, using an analysis framework provided by their instructor, Sara's student cohort engages in brainstorming activities centered on how they think longstanding Japanese workers will assimilate the new employment compact given sociological, technological, ecological, economic, and political environments. Thirdly, given these five analyses areas, the group is now able to hypothesize about a new set of assumptions Japanese workers may have to begin to accept about their employment and social relationships. Fourthly, active experimentation on the part of Sara's student cohort will use the case-study methods about how other Japanese firms, other Asian societies, and the United States began to implement an employment social compact that allowed for often difficult, but constructive changes. Finally, positive synthesis for Sara and Japanese workers can only occur if the resulting new employment compact has taken into consideration the best of previous employment benefits and expectations designed to offer just and equitable employment relationships.

Implications for Practice and Future Research

Globalization continues to impact the working lives of adults domestically and abroad. This accelerating global phenomenon has made life-long learning for most adult employees a quasi-compulsory requirement if they expect to remain or offer marketable knowledge, skills, or the preferred attitudes. As such, learning for adult students must continue to remain relevant to their "real world" requirements (e.g., aligned with organizational goals) for the most part, and this demands continual review and revision of curricular designs which enable crucial learning objectives to be achieved.

Relevant curricular *content* appropriate for 21st century adult learners must include learning objectives which involve their evolving experiences, relate to workplace tasks, and enables them to apply academic tools and concepts to workplace requirements. The *form* of adult-appropriate curricular designs can include dialectical frameworks

which serve as "validating mechanisms" addressing crucial subject matter. It has been my experience that dialectical exchanges can be accomplished within experiential learning (constructivist) contexts, wherein students' previously held expectations and assumptions can be positively challenged with new and emerging realities, and where the beginning of enlightened synthesis can be achieved about crucial subject matter issues. But can transformational learning occur within all students? It can if the major curricular elements require all students to apply course tools and concepts to a real-world, workplace problems or challenges. Ideally, course-related major project assignments should include team-based, cross-functional collaboration experiences, indeed, requiring on-line or web-based technologies and platforms; this, of course, relates to the real world, wherein employee-students are increasingly required to collaborate with their colleagues across time and space at work. As such, what seems to be missing in the literature about 21st century adult learners is how a dialectical process can occur via on-line or within virtual teaching and learning environments. This is an area that must be investigated and researched at greater lengths and depths.

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