

Original Paper

A New Model of Adult Transformative Learning: Contextualizing Spiritual Intelligence (SQ) Theory

Stephen R. White^{1*}

¹ University of North Carolina System, Vilas, North Carolina, USA

* Stephen R. White, E-mail: whitesr@boone.net

Abstract

In 1978, Jack Mezirow divulged the theory of adult transformative learning. For over thirty-years, transformative learning theory has inspired a considerable amount of empirical research and theoretical musing. The primary focus of this research has been exploring ways to expand the transformative learning process in adult education. The objective of this study is to extend the theoretical exploration of transformative learning by advocating a new model of the transformative learning process that contextualizes empirical research findings of neurologists, cognitive scientists and psychologists that is being termed here collectively as spiritual intelligence (SQ) theory.

Keywords

adult education, college teaching and curriculum, transformative learning, college spiritual intelligence (SQ)

I believe education means more than just imparting knowledge. It means the formation of the ‘whole person’... The least of learning is done in the classroom. We have what we seek, it is there all the time, and if we give it time, it will make itself known to us.

Thomas Merton (1915-1968)

The psyche is the greatest of all cosmic wonders and the ‘sine qua non’ of the world as an object. It is the highest degree odd that Western man, with but very few – and ever fewer – exceptions apparently pays so little regard to the fact. Swamped by the knowledge of external objects, the subject of all knowledge [the psyche world within] has been temporarily eclipsed to the point of seeming nonexistence.

Carl G. Jung (1875-1961)

The objective of this study is to theoretically augment adult transformative learning by contextualizing the learning process by infusing spiritual intelligence (SQ) theory into a new model of the process. SQ

theory is cultivated in this work through a synthesis of neurological, cognitive and psychological scientific research. The notion of spiritual intelligence as used here is not an endorsement of a religious position or agenda. Rather spirituality refers to the learner's natural biological processes and psychological development that result in higher level of learning and a deeper shift in social meaning and conscious perspectives. The thesis here is that a synthesis between transformative learning and SQ theory derived from science are congruent and provide an augmentation for adult educators who seek alternative means to advance adult learning (Knowles, Holton III & Swanson, 2005; Knowles, 1984a, 1984b).

1. Transformative Learning: What is it?

Adult educator Jack Mezirow is held to be the pioneer of transformative learning theory. Adult education theorist Patricia Cranton, as well as many others, has sought to refine and expand our understanding of transformative learning. Both Mezirow and Cranton's research finding will serve as the foundational knowledge-base for the transformative learning model presented here.

The foundation of the theory emerged from Mezirow's research of diverse groups of women at community colleges. He found that as these women progress through their educational journey that through the learning process that they come to a different understanding of their subjective life-world causing an intellectual shift in their base assumptions regarding their social and cultural milieu resulting in a deeper more meaningful learning experience (Grabov, 1997; King, 2005; Laughlin, 1993; Merriam, 2001; Merriam & Brockett, 1997; Mezirow, 1978(a); 1978 (b); 1991 (a); 1994; Taylor, 2006; Vella, 2002).

Because the focus of Transformative Learning Theory is on the individual learner and how knowledge is shaped transformative learning is often placed in the cognitive constructivist family of learning theories. This true even though Mezirow was deeply influenced by social critical theory. Transformative learning described as the educational process by which adult learners construe, validate, and reformulate the meaning of their inner and outer life-experiences.

Mezirow and Cranton have identified three domains of knowledge: (1) Technical, (2) practical knowledge and (3) emancipatory. **Technical knowledge** is the cause and effect process of subject-content based learning. The focus is on the learner's acquisition of knowledge and skills in a specific discipline or subject. **Practical knowledge** is the ability of making ourselves understood and developing an understanding of what others mean to themselves and society. The goal is to assist the learner identify their needs and to establish their own objectives and standards for evaluation of the learning process. **Emancipatory knowledge** is the intellectual process of critical self-reflection. Critical self-reflection is to acquire greater consciousness of limiting forces that the learner must address and achieving freedom from those forces. Both Mezirow and Cranton argue that transformative learning can occur within anyone of these three domains, but is most likely to occur within the emancipator domain of knowledge (Cranton, 2006; Mezirow, 1991a).

Cranton has further elaborated on the relationship between meaning perspectives and the three domains of knowledge. She states that epistemic meaning perspectives are relations to technical knowledge and its use; sociolinguistic meaning perspectives are related to practical knowledge manifested in social norms and cultural expectations; psychological perspectives are related emancipatory knowledge domain and includes our ideas about self-concept, anxieties, and personalities (Cranton, 2006).

This process of intellectual transformation is typically ignited by a unique problem or new challenge. As adult learners enter this period of tribulation, they will reflect critically in search of an intellectual resolution, naturally. Transformation occurs when past assumptions are realized by the learner as being illogically sound and they attempt to reconcile new ideas with their meaning perspectives. Mezirow framed this transformational process as **critical reflection** (Merriam & Caffarella, 1999; Mezirow, 1990; 1994; O'Sullivan, 1999).

Mezirow described the transformative learning process as occurring through three stages of critical reflection that facilitates a shift in the learner's cultural and social meaning perspectives. These stages are (1) content reflection, (2) process reflection and (3) premise reflection. **Content reflection stage** is an examination of the content regarding the problem or a description of a problem. **Process reflection stage** is the examination of intellectual strategies used to solve problems, and the **premise reflection stage** is the re-questioning of the initial problem. It is here, in the premise reflection stage, where there is a potential for an intellectual transformation and for a shift in meaning perspectives to occur. The cognitive process of analytical, critical and reflective thinking that occurs at the premise stage ordinarily indicates that a transformation is transpiring (Mezirow, 1989, 1990b, 1994, 1995; 2000; Cranton, 1997).

Transformative learning theory challenges educators of adults to explore the implications of intellectual transformation and shifts of meaning perspectives. The hypothesis here is that latter research reveals that there exists another domain of knowledge of meaning perspective, a new fourth stage of critical reflection. This meaning perspective **existential perspective**, the domain of knowledge and intelligence is **spiritual**, with this fourth stage of critical reflection being referenced as the **transcendent reflection stage**. Transcendent reflection stage is the intellectual process of asking deeply meaningful and larger existential questions. The theoretical grounding for these new propositions is what I term as being—**Spiritual Intelligence Theory (SQ)**.

2. Spiritual Intelligence (SQ) Theory: What is it?

Postmodern educational history has been a period in which our concept of what constitutes intelligence has made an evolutionary leap in regards to what constitutes intelligence. Recent modern history was driven by a strict adherence positivist thinking and empirical quest to define intelligence scientifically. The overriding goal was to objectively define predictable stages and states of intellectual advancement, quantitatively. Predictively, out of this academic climate emerged the concept of Intelligent Quotient (IQ). The notion of IQ has dominated educational praxis at all levels learning and learner profiling for

several decades, now (Gardner, 1983; 1985, 1993; Binét, 1909; Wolman, 2001).

Nevertheless, a number of cognitive scientists and educational theorists rejected the notion of a scientific IQ standardization as the sole domain of human intelligence. Their contention being that the phenomenon of human intelligence, and the process of cognitive and intellectual development, is much too complex and qualitatively subjective for a rigid depiction and measurement (Gardner, 1983; 2001; Sheared & Sissel, 2001; Wolman, 2001).

Howard Gardner has been a leader at the forefront of the counter-movement. His research has explored the differentiation of mental processes and corresponding ways of knowing. His insightful research has revealed that each individual has a unique base line of cognitive skills and abilities that collectively constitute the intellect (Gardner, 1985, 1993).

Gardner's argument is particularly compelling given that it is validated through a synthesis of interdisciplinary research findings including anthropology, cognitive psychology, developmental psychology, psychometrics, biological studies, animal physiology, and neurology. He specifically asserts that for there to be a viable theory of intelligence there must exist biological evidence of the cognitive process and mental attribute. That is, evidence of intelligence must be grounded in our knowledge regarding the physiology of the brain's structure and psychological process (Armstrong, 1999). This Gardnerian assertion validates the utilization of SQ theory infused into transformative learning process as stated in this study.

Gardner termed research findings as being **Multiple Intelligences (MI) theory**. MI theory reveals that learners have varied ways of learning and knowing. This is due to the fact that each learner has a unique set of intellectual tendencies and a distinctive matrix of these tendencies provides a profile of an individual's intellectual disposition. He has identified eight differentiated multiple intelligences that are interconnected and interrelated: (1) Linguistic (language), (2) logical-mathematical (logical reasoning), (3) spatial (visual), (4) bodily kinesthetic (bodily-physical expression, dance), (5) musical, (6), interpersonal (social), (7) intrapersonal (self-knowledge), and (8) naturalistic (connection with nature). (Gardner, 1983; 1993; 2001).

During his investigation of multi-intelligences, Gardner observed that certain individuals have the natural ability to think reflectively about intense existential questions. These individuals' have innate cognitive abilities to achieve altered states of consciousness like those exemplified by the World's great mystics. He states that (2001) "existential intelligence [or spiritual intelligence] can be manifested by anyone who exhibits facility, clarity, or depth in thinking about 'ultimate issues' whether the thoughts are positive or negative, moral or immoral, open ended or conclusive"(p. 69). He notes that a rational mystic such as the avant-garde scientist and global visionary of human evolution Pierre Teilhard de Chardin as an exemplary individual with an extraordinary existential, or spiritual, intelligence.

This he viewed as spiritual intelligence. Nevertheless Gardner strictly adhere to the principle that an intelligence could not identified solely on behavioral or thought patterns but that there also be congruent observed biological evidence within the brain as well (Gardner, 1983).

Since that time further biological research on the brain's organization suggests that there is empirical physical evidence giving validity for spiritual intelligence theory. There is now biological evidence to support the theory of an existence of spiritual intelligence (Hammer, 2005; Newberg & Walden, 2010). Thus today several scholars are pursuing the quest for spiritual intelligence. These scholars believe that spirituality is a natural cognitive process and function of the brain that produces a unique form of intelligence. Thus spiritual intelligence is viewed as the cognitive processes and abilities of meaning construction, intuitively seeing interconnectedness, a high level of existential selfhood and a sense of a unified reality. It is yet another process of constructivist learning leading to an intellectual transformation (Alper, 2001; Buzman, 2001; D'Aquili & Newburg, 1999; Deacon, 1997; McKinney, 1994; Newburg & D'Aquili, 2002).

Michael Persinger (1996) and V. J. Ramachandran (1999) claim to have discovered the "God spot" within the brain. The "God spot" is an area in the brain that functions like a built-in spiritual center located within neural connections in the temporal lobes. Examination of various brain scans, taken with positron emission topography, reveal that these neural areas light up whenever subjects are exposed to discussion of spiritual motifs or religious topics. Persinger and Ramachandran are very careful to point out that the "God spot" does not prove the existence of a Divine Being. Nevertheless, their findings does support that the brain is wired for cognitive constructs that produce transcendent reflection. Thus we can surmise that humankind is naturally predisposed to think in spiritual terms.

Wolf Singer and Charles Gray have discovered that there are neural processes in the brain devoted to making interconnections that unify rational, emotional, and transcendental spiritual experiences. Prior to Singer and Gray's findings the consensus in the scientific community was that the brain's organization is capable of producing only two neural processes: (a) neurological processes serially connecting neural tracts empowering the brain to think logically and rationally in a systematic fashion, (b) neurological processes where thousands of neurons are interconnected in a chaotic mode of massively organized bundles resulting in affective thoughts. However their observation of unifying neural oscillations means that a unique third kind of thinking exists. The brain unitized neurological organizations result in cognitive processes that seeks to answer existential questions that are interconnected to transcend spiritual reflection (Singer & Gray, 1995; Singer, 1999).

Evolutionary psychologist and biologist Mathew Alper (2001) argues that spiritual experience is essentially a natural function of the brain. He asserts that spiritual impulses have emerged with the brain over time through hominid evolution. This evolutionary phenomenon has occurred with hominid consciousness of death, which, when coupled with an innate drive for survival, ultimately results in transcendental thinking, spiritual musing, and mystical experiences.

Physicians Eugene D'Aquili and Andrew Newberg (1999) propose that there are neurological explanations for transcendent spiritual thinking. They contend that insights from neurological studies have revealed how the mind naturally functions to construct spiritual experiences. The physiological structure of the brain forms a kind of "mystical union" between the mind and the brain that results in

how we experience and interpret the external world. D'Aquili and Newberg assert that all spiritual phenomena are generated by the brain and central nervous system and that there is sound scientific evidence to prove their assertion (Joseph, Newburg & Albright, Rausch, James & Nietzsche, 2003).

Molecular biologist Dean Hamer (2005) has developed the theory of the "God Gene". Hamer conducted extensive research on the temperament of cancer patients. He administered the Temperamental Character Inventory (TCI) assessment instrument, developed by psychiatrist Robert Cloninger, on these cancer patients. Part of TCI's assessment is of a person's temperament toward "self-transcendence." Hamer categorized the results from low to high according to the TCI scale. He sought to match to the gene configuration of these individuals in an effort to identify the DNA responsible for scoring differences. He specifically focused on nine genes thought to be directly linked production of four of the brain's chemicals (monoamines: serotonin, norepinephrine and dopamine). These four chemical compounds are believed to influence mood and motor control.

Hamer argues that there is compelling evidence that the gene known as VMAT2 (vesicular monoamine transporter) has a direct correlation between it and the TCI scores. That is, those with VMAT2 in a specific spot ranked high while those who low evidence of the gene in that spot had a low score. Thus his conclusion is that those individuals with a high level of these chemicals likelier the temperament and a greater disposition toward mystical insights. He terms the VMAT2 gene as the "God Gene."

He defines self-transcendence as having three distinct characteristics: (1) Self-forgetfulness (the ability to become absorbed into an experience), (2) transpersonal identification (feeling of connectedness to a larger universe or grand purpose), and (3) mysticism (an openness to things not tangibly verifiable). Collectively these characteristics provide biological and scientific foundations for spiritual intelligence. Physicist Diana Zohar and Psychologist Ian Marshall (2000) research has sought to explicitly define spiritual intelligence (SQ). They note that computers can have a high IQ; some animals have a high EQ, but only humans that have SQ. They define SQ as being the intellectual ability for transcendent reflections. Transcendent reflection is to ask questions such why we are here and to be creative in our pursuit of answers. Spiritual intelligence is the cognitive force from which humans address and solves problems of meaning and value, to place our life-world actions in a wider more meaningful context, and reflectively assess which course of action is more meaningful than another. These cognitive processes result in both social modifications and consciousness transformations.

Cognitive psychologist Richard N. Wolman has also provided a description of spiritual intelligence. Wolman believes that all humans' possess varying levels of an inherent drive for self-improvement manifested in human's spiritual thinking. Spiritual intelligence is rooted in the human need for understanding the world and our place in it. Therefore we need to understand and seek ways to develop the ability to think with our soul.

He writes (2001):

By spiritual I mean the ancient and binding human quest for connectedness with something larger and more trustworthy than our egos—with our own souls, with one another, with the

world of history and nature, with the invisible winds of the spirit, with the mystery of being alive ... Spiritual intelligence can best be seen as a capacity for a particular kind of experience we humans possess, and one for which we also demonstrate certain related abilities. Our task now is to understand how this intelligence can and does influence our lives, how its energy can be harnessed, and how we can come to know ourselves better through spiritual self-direction (p. 26 & p. 119).

Wolman developed the PsychoMatrix Spirituality Instrument (PSI) as an assessment system that provides insight into a person's spiritual life-world. He thinks that by "understanding the context and meaning of our actions frees us to make conscious choices, rather than enslaving us to respond reflexively to life's demands" (p. 3). Accordingly, the development of spiritual intelligence empowers individuals to articulate ineffable moments and in doing so release of the psyche's intrinsic spiritual energy.

From this literature review we can construct a theoretical rubric of what is spiritual intelligence (SQ):

Scientific research suggests that the brain's actual "physiological organization" is designed to produce spiritual thoughts.

SQ is a rational higher level of consciousness.

SQ is the capacity for affective intellectual development.

SQ implies that an individual has the an unique ability to construct a vision that is infused with a notion of ultimate purpose.

SQ is the ability of intuitively seeing connections between existential ideas and varied life-world experiences.

SQ provides a grounding for authentic self-efficacy coupled with an empathetic understanding of others.

SQ is a predisposition to see inherent connections that may not be tangible and to seek existential answers that support a rational theoretical orientation.

3. Contextualizing Transformative Learning with SQ Theory: Constructing a New Theoretical Model

Theoretically transformative learning can be enhanced by understanding SQ theory and how it relates to critical reflection that is transcendent in context. This augmentation is compelling and should motivate adult educators to explore more deeply the linkage between transformative learning practices and transcendent.

Research shows that SQ is a biological process and rational higher level of consciousness that has the capacity to increase adult learner's intellectual development. SQ infers that a learner has the unique ability to construct a meaningful perspective of ultimate purpose, a transcendent reflection regarding themselves, their life-world experiences and reality construction. Transcendent reflection is to nurture the intellectual ability of seeing connections between existential questions and ideas with social and

cultural meaning perspectives thus potentially providing greater self-efficacy and an empathetic understanding of others. This intellectual transformation can result in new meaning perspectives that empower the learner to understand the interconnections between their tangible life-world with larger transcendent reflection. Spiritual intelligence can best be seen as a capacity for a deeper transformative learning that includes content, process, and premise reflections but is inclusive of transcend reflection. To illustrate this process of transformative learning, a model that integrates SQ and the transcendent reflection into Mezirow's three critical reflections: Content, process and premise is presented (see Diagram 1):

Table 1. Transformative Learning and Spiritual Intelligence (SQ): Transcendent Reflection Model

Critical	Meaning	Knowledge
Reflection Process	Perspective	Domain
Content Reflection	Epistemic	Technical
Process Reflection	Sociolinguistic	Practical
Premise Reflection	Psychological	Emancipatory
Transcendent Reflection	Existential	Spiritual (SQ)

4. Conclusion: The Quest for Transformation of the Adult Learner

In many respects, education has evolved as America's secular religion. That is, as a cultural value, many Americans have faith in education as a transformational journey toward heighten self-efficacy through intellectual illumination. Such disposition extends the process of education beyond the mere acquisition of knowledge. Both learning and transcendent spiritual reflection do in fact have a deep effect on the individual's meaning perspective. Thus there is an intrinsic linkage between education and some conceptualizations of spirituality. (Daloze 1999; Dirkx, 2001; Miller & Nakagawa, 2002; Wright, 2001).

Research reveals that most adult educators hold an emancipator disposition toward the profession. This attitude motivates them to consciously pursue heightening adult learners' self-efficacy as well as expand their intellectual property (Kerka, 2000; Leach, 2001; Merriam, 2001; Sheared & Sissel, 2001; Taylor, Marinau & Fiddler, 2000; Zachary, 2000).

Likewise, the consensus among adult educators is that an understanding of learners' affective development is as crucial to effectively educating them as measuring their existing knowledge base or awareness of their socioeconomic motives. Thus adult educators are persistent in their search to understand subjective world as a means to improve current practices (Daloze, Keen, Keen & Parks, 1997; Pava & Primeaux, 2003; Ross-Gordon, 2002; Smith & Pourchot, 1998).

Transformative learning is a shift of consciousness that changes our way of being of thinking that

dependent on the subjective realm of interior experience (Cranton, 1997; Machovec, 2002; Mezirow, 1978b; O'Sullivan, 2003). This definition is consistent with what is being defined as SQ in this study and is congruent with how the human brain is organized and functions. Transcendent reflection infused with SQ theory, can result in a deeper transformative learning experience (Newberg, A, 2010; Newberg, A & Walden, 2007; 2010; Merriam & Caffarella, 1999; O'Sullivan, 2002; White, 2001).

Several adult educators have collectively investigated spirituality as an integral part of the profession maintain that the history of adult education shows that the profession was originally deeply rooted to spiritual development. The challenge today is for the profession to recover this heritage through consciously integrating spiritual elements into reflectively constructed learning contexts. What we learn from recent research on the relationship between spirituality and cognitive development is that it is a significant issue for adult educators to explore. In doing so, adult educators have an opportunity to define a new age where our conceptual vision of transformative learning is inclusive of the spiritual context of intellectual development (Emmon, 1999; English, 2000; English, Fenwick, & Parsons, 2003; Hall & Edward, 1996; Machovec, 2002; Sisk & Torance, 2001; Tisdell, 2003; Vaughan, 2002).

Adult educators are charged with expanding the knowledge base regarding the linkage between spirituality and intellectual development. Discovering the depth of the interrelationship between learning, intellectual development and transcendent consciousness may be the defining legacies of this generation of adult educators. Given this, the proposal to explore infusing spiritual intelligence, SQ theory, into transformative learning is professionally challenging and most relevant for our times.

References

- Alper, M. (2001). *The God part of the brain*. Seattle, WA: Rogue press.
- Armstrong, T. (1999). *7 kinds of smart: Identifying and developing your multiple intelligences*. New York: A Plume Book.
- Binét, A. (1909). *Les idées modernes sur les enfants*. Paris: Flammarion.
- Buzan, T. (2001). *The power of spiritual intelligence*. New York: Harper Collins.
- Cranton, P. (Ed). (1997). *Transformative learning in action: Insights from practice*. New Directions for Adult and Continuing Education. NO. 74. San Francisco, CA: Jossey-Bass, Summer.
- Cranton, P. (2006). *Understanding and promoting transformative learning: A guide for educators of adults* (2nd ed.). San Francisco, CA: Jossey-Bass.
- D'Aquili & Newburg, A. B (1999). *The mystical mind: Probing the biology of religious experience*. Minneapolis, MN: Augsburg Press.
- Daloz, L. A. (1999). *Mentor: Guiding the journey of adult learners*. San Francisco: Jossey-Bass.
- Daloz, L. A., Keen, C. H., Keen, J. P., & Parks, S. D. (1997). *Common fire: Leading lives of commitment in a complex world*. Boston: Beacon Press.
- Deacon, T. (1997). *The symbolic species*. London: Allen Laine.
- Dirkx, J. M. (2001). *The power of feelings: Emotion, imagination, and the construction of meaning in*

- adult learning*. New Direction in Adult and Continuing Education. San Francisco: Jossey-Bass.
- Emmons, R. A. (1999). *The psychology of ultimate concern: Motivation and Spirituality in personality*. New York: Guilford Press.
- English, L. M., & Gilen, M. A. (2000). *Addressing the spiritual dimensions of adult learning: What educators can do?* San Francisco: Jossey-Bass.
- English, L. M., Fenwick, T. J., & Parsons, J. (2003). *Spirituality of adult education and training*. New York: Krieger Publishing.
- Gardner, H. (1983). *Frames of mind: The theory of multiple intelligence*. New York: Basic Books.
- Gardner, H. (1985). *The mind's new science: A history of the cognitive revolution*. New York: Basic Books, Inc.
- Gardner, H. (1993). *Multiple intelligence: The theory in practice*. New York: Basic Books.
- Gardner, H. (2001). *Intelligence reframed: Multiple intelligence for the 21st century*. New York: Basic Books.
- Grabov, V. (1997). The Many Facets of Transformative Learning Theory and Practice. In P. Cranton (Ed.), *Transformative Learning in Action: Insights from Practice* (pp. 89-96). NEW DIRECTIONS FOR ADULT AND CONTINUING EDUCATION NO, 74. San Francisco, CA: Jossey-Bass, Summer.
- Hall, T., & Edward, K. J. (1996). The initial development and factor analysis of the spiritual assessment inventory. *Journal of Psychology and Theology*, 24(3), 233-246.
- Hamer, D. H. (2005). *The God gene: How faith is hardwired into our genes*. Anchor.
- Joseph, R., Newburg, A., Albright, C. R., Rausch, C. A., Persinger, M., James, W., & Nietzsche, F. (2003). *Nureotheology*. New York: University Press.
- Kerka, S. (2000). *Teaching adults? Is it different? Myths and realities*. Columbus, OH. Adult Career and Vocational Education, No. 21.
- King, K. P. (2005). *Bringing transformative learning to life*. Melbourne, FL: Krieger Publishing Co.
- Knowles, M., Holton III, E. F., & Swanson, R. A. (2005). *The adult learner* (6th ed.). Burlington, MA: Elsevier.
- Knowles, M. (1984a). *The adult learner: A neglected species* (3rd ed.). Houston, TX: Gulf Publishing.
- Knowles, M. (1984b). *Reflective learning in action*. San Francisco: Jossey-Bass.
- Leach, L. (2001). Autonomy, accountability, and adult learning. *New Zealand Journal of Adult Learning*, 29(2), 25-45.
- Loughlin, K. A. (1993). *Women's perceptions of transformative learning experiences within consciousness raising*. Lweiston, N.Y.: Edwin Mellen Press.
- Machovec, F. J. (2002). *Spiritual intelligence: Behavioral sciences and the humanities*. Lewiston, N.Y.: Edwin Mullen Press.
- Merriam, S. B. (2001). *Reflective learning and self-directed learning*. New Directions for Adult and Continuing Education, No. 89. San Francisco: Josses-Bass.

- Merriam, S. B., & Caffarella, R. S. (1999). *Learning in adulthood: A comprehensive Guide* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Mezirow, J. (1978a). Perspective transformation. *ADULT EDUCATION*, 28, 100-110.
- Mezirow, J. (1978b). *Education for perspective transformation: Women's reentry in community colleges*. Center for Adult Education, Teacher's College. Columbia University: New York.
- Mezirow, J. (1989). *Transformation theory and social action: A reply to Collard and Law*. *Adult Education Quarterly*, 39(2), 170-176.
- Mezirow, J. (1990). *Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning*. San Francisco, CA: Jossey-Bass.
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco, CA: Jossey-Bass.
- Mezirow, J. (1991b). Transformation theory and cultural context: A reply to Clark and Wilson. *Adult Education Quarterly*, 41(3), 188-192.
- Mezirow, J. (1994). Understanding transformation theory. *Adult Education Quarterly*, 44(4), 222-232.
- Mezirow, J. (1995). Transformation Theory of Adult Learning. In M. R. Welton (Ed.), *IN DEFENSE OF THE LEIFEWORLD* (pp. 39-70). New York: SUNY Press.
- Mezirow, J. (1997). *Transformative Learning: Theory to Practice*. TRANSFORMATIVE LEARNING IN ACTION: INSIGHTS FROM PRACTICE. NEW DIRECTIONS FOR ADULT AND CONTINUING EDUCATION, NO. 74. San Francisco, CA: Jossey-Bass.
- Mezirow, J. (2000). *Learning as transformation: Critical perspective on a theory in progress*. San Francisco: Jossey-Bass.
- Merriam, S. B., & Brockett, R. G. (1997). *The profession and practice of adult education: An introduction*. San Francisco: Jossey-Bass.
- Miller, J. P., & Nakagawa, Y. (2002). *Nurturing our wholeness: Perspective on spirituality in education*. Brandon, VT: Foundation for Educational Renewal.
- McKinney, L. O. (1994). *Neurotheology: Virtual religion in the 21st Century*. San Francisco: American Institute for Mindfulness.
- Newberg, A. (2010). *Principles of neurotheology*. United Kingdom: Ashgate.
- Newburg, A., D'Aquili, & Rause, V. (2002). *Why God won't go away: Brain science and the biology of belief*. New York: Ballantine Books.
- Newberg, A., & Walden, M. R. (2010). *How God changes your brain: Breakthrough findings from a leading neuroscientist*. New York: Ballantine Books.
- O'Sullivan, E. (1999). *Transformative learning: Educational vision for the 21st century*. London: Zed Books.
- O'Sullivan, E. (2002). *Expanding the boundaries of transformative learning: Essays on theory and praxis*. New York: Palgrave.
- O'Sullivan, E. (2003). Bringing a perspective of transformative learning to globalized consumption. *International Journal of Consumer Studies*, 27(4), 326-330.

- Pava, M. L., & Primeaux, P. (2003). Spiritual intelligence at work: Meaning, metaphor and morals. In *Research in Ethical Issues in organization* (Vol. 5). Greenwich, Conn: JAI Press.
- Persinger, M.A. (1996). Feelings of past lives as expected perturbations within neurocognitive processes that generate the sense of self: Contributions from limbic labiality and vectorial hemisphericity. *Perceptual and Motor Skills*, 83(2), 1107-1121.
- Ramachadran, V. S. (1999). *Phantoms in the brain: Exploring the mysteries of the human brain*. London: Fourth Estate.
- Ross-Gordon, J. M. (2002). *Contemporary viewpoints on teaching adults effectively*. New Directions for Adult and Continuing Education, No. 93. San Francisco: Jossey-Bass.
- Sheared, V., & Sissel, P. A. (2001). *Making space: Merging theory and practice in adult education*. Westport, CT: Bergin & Garvey.
- Singer, W. (1999). Striving for coherence. *Nature*, 397, 391-393.
- Singer, W., & Gray, C. M. (1995). Visual feature integration and the temporal correlation hypothesis. *Annual Review of Neuroscience*, 18, 555-586.
- Sisk, D. A., & Torrance, E. P. (2001). *Spiritual intelligence: Developing higher consciousness*. Hudley, MA: Creative Education.
- Smith, M. C., & Pourchot, T. (1998). *Adult learning and development: Perspectives from educational psychology*. Mahwah, N.J.: Erlbuan.
- Taylor, E. W. (2006). *Teaching for change: Fostering transformative learning in the classroom*. New Directions for Adult and Continuing Education. Hoboken, N.J.: John Wiley & Sons, Inc.
- Taylor, K., Marienau, C., & Fiddler, M. (2000). *Developing adult learners*. San Francisco, CA: Jossey-Bass.
- Tisdell, E. J. (2003). *Exploring spirituality and culture in adult and higher education*. San Francisco: Jossey-Bass.
- Vaughan, F (2002). What is spiritual intelligence? *Journal of Humanistic Psychology*, 42(2), 16-33.
- Vella, J. (2002). *Learn to listen, learning to teach: The power of dialogue in educating adults*. San Francisco: Jossey-Bass.
- White, S. R. (2001). *Spiritual intelligence (SQ) and developmental education: Exploring affective assessment system of at-risk adult learners*. Presentation at the 3rd National Conference on Developmental Education, Charlotte, North Carolina.
- Wolman, R. W. (2001). *Thinking with your soul: Spiritual intelligence and why it matters*. New York: Harmony Books.
- Wright, A. (2001). *Spirituality and Education (Master classes in education)*. New York: Routledge.
- Zachary, L. J. (2000). *The mentor's guide: Facilitating effective learning relationships*. San Francisco: Jossey-Bass.
- Zohar, D., & Marshall, I. (2000). *SQ: Spiritual intelligence the ultimate intelligence*. London: Bloomsbury Publishing.