

Looking at Stress and Learning: Peer Coaching with Compassion as a Possible Remedy

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Abstract:

We contribute to scholarship by linking recent research on stress to student learning. Specifically, we discuss how chronic stress results in lower immune system functioning, cognitive and perceptual impairment, less openness to emotions, ideas, and other people, and decreased ability to learn (or to retain learning). We emphasize the importance of paying attention to emotions in the classroom and propose peer coaching with compassion as one possible means to counter the effects of stress.

Key Words:

stress, learning, positive emotion, peer coaching.

Introduction

Whether faculty simply look around at those they work with or view the mounting empirical evidence, work-related stress is on the rise (Cavanaugh, Boswell, Roehling, & Boudreau, 2000). In fact, some have claimed that workplace stress is reaching epidemic levels (Fuller, 2006; Marino, 1997, Tillson, 1997). The classroom and educational settings in general are not immune to these trends.

Our students, like professionals in the workplace, also wrestle with increasing levels of stress. Research shows that not only are young adults more stressed today than seventy years ago (Twenge, Gentile, DeWall, Ma, Lacefield, & Schurtz, 2010), but

education itself may increase the stress levels students experience (de Carvalho, Gadzella, Henley, & Ball, 2009; Reisberg, 2000). College freshmen now report having the highest levels of stress in 25 years (Pryor, Hurtado, DeAngelo, Blake, & Tran, 2011). One study showed that among Indian management students increased stress levels were related to increased student workloads, lack of sleep, and the challenges of securing internships and jobs (Sinha & Sharma, 2009). William Stixrud (2011) recently called attention to these trends and invited educators to take notice. We echo his invitation.

There are other important sources of stress that may weigh indirectly on students. These can originate from a decline in the perceived utility of traditional forms of education (Christensen & Eyring, 2011). In our field of management education, several scholars have expressed concerns as to whether the current forms of management education meet the needs of the organizations who hire our students and whether our students are gaining any benefit from a degree in management as opposed to other fields (e.g., Augier & March, 2007; Bennis & O'Toole, 2005; Datar, Garvin, & Cullen, 2010; Khurana, 2007). This perceived loss of relevance can cause a decrease in enrollment numbers, which puts additional stress on faculty and administrators. A loss of relevance can also influence organizations that, in turn, decide to look away from professional schools when trying to recruit employees who will meet their needs (Datar et al., 2010; Khurana, 2007). Less recruiters equates to less job offers per student, which would likely increase student stress levels.

Finally, no faculty like to hear their curriculum may not be relevant or their teaching style learning inhibitive; yet, as faculty are increasingly rewarded less for curriculum development or teaching (Bennis, 2010; Druskat, 2005; Lorsch, 2009), one begins to wonder at what point faculty feel the dissonance of investing further in something they may be rewarded for less and less.

Whatever the drivers that increase or sustain student stress, we believe that the elevated levels of stress have harmful effects on students' ability to learn and retain what they learn. Learning requires a different psych-physiological state—alternating arousal of the parasympathetic nervous system (PNS) and the sympathetic nervous system (SNS), but in uneven doses, emphasizing the PNS.

In this essay, we review recent research on how stress impacts the human body. Specifically, we discuss how chronic stress results in lower immune system functioning, cognitive and perceptual impairment, less openness to emotions, ideas, and other people, and decreased ability to learn (or to retain learning). We aspire to persuade instructors that they must pay close attention to the emotional tone of their teaching style and the emotional tone that exists in their classrooms. We offer peer coaching with compassion as a potential remedy to counter the effects of student stress and suggest several educational implications for future research and practice.

The Science of Chronic Stress

The conditions of modern life and work can create an environment in which people are under an unhealthy allostatic load, or strain (Dickerson & Kemeny, 2004). A person's allostatic load is the activation of a person's stress response (used to manage

acute threats). If sustained over time, the elevated and sustained levels of stress begin to hurt the body (McEwen & Stellar, 1993). While stress is an integral part of life and enables us to activate the human organism and adapt to changing conditions, it can also invoke dysfunctional and harmful conditions. It is not stress in and of itself that is bad for people; it is the overload from chronic stress.

A review of the stress literature shows that four conditions arouse the human stress reaction: (1) dealing with something that is important to you, and/or (2) a situation in which the outcomes are uncertain, and/or (3) a situation in which you feel that people are watching or evaluating you, and/or (4) anticipating any of these three (Segerstrom and Miller, 2004). These four conditions are often a part of the classroom experience for students. Students invest their time and resources in education; it is important to them. Given each class and each instructor is different from another, often the outcome of how they will perform in a class is not clear to them, especially at the first part of a new course. Finally, an inherent part of the educational experience is evaluation by an instructor and perhaps others, such as the students' peers.

On the basis of Intentional Change Theory (Boyatzis, 2006), experiences in the Positive Emotional Attractor (PEA) are thought to arouse neuro-endocrine systems that stimulate better cognitive functioning, increase perceptual openness to ideas, emotions and people, foster positive emotional states, increase immunity function, and reverse some of the damage from chronic stress (Boyatzis, 2006; Boyatzis, Smith, & Blaize, 2006). On the other hand, arousal of the Negative Emotional Attractor (NEA) is associated with putting a person on the defensive, arousing neuro-endocrine systems characteristic of the human stress response, and decreasing cognitive, perceptual, and immune functioning (Boyatzis et al., 2006). We now more closely examine each of the PEA and NEA states.

Positive and Negative Emotional Attractors

The PEA state is about possibilities, hope for the future, and dreams (Boyatzis, 2008). It often involves an optimistic view of the future and a sense of joy and excitement about one's sense of calling, passion, values, purpose, possibilities, outlook, and self-directed learning goals. The PEA can be thought of as a focus on a person's Ideal Self (Higgins, 1987; Higgins, Roney, Crowe, & Hymes, 1994) versus their Ought Self (Brockner & Higgins, 2001). The Ought Self is what a person feels others expect or want the person to do; it is the ideal self of others imposed on the self.

The parasympathetic nervous system (PNS) and the corresponding endocrine systems are part of the autonomic nervous system (Janig & Habler, 1999). The experience of compassion is related to PNS arousal, as are emotions such as elation and amusement and people reporting feeling excited (Ashby, Isen, & Turken, 1999; Davidson, Ekman, Saron, Senulis, & Driesen, 1990; Ekman, Davidson, & Friesen, 1990; Fredrickson, 2001; Tomarken, Davidson, Wheeler, & Doss, 1992). Similarly, being playful and laughter have also been related to PNS arousal (Ayan, 2009; Isen & Reeve, 2005).

PNS arousal involves an emotional state referred to as a sense of well-being and hope (Insel, 1997). These positive emotions, once aroused, have been shown to affect

cognitive functioning (Aspinwall & Stauding, 2003; Isen, Daubman & Nowicki, 1987) by allowing access to information in one's memory (Isen, Clark, Shalke, & Karp, 1978), and integration of information (Estrada, Isen & Young, 1994, 1997). Being in the PEA, and its proposed link to PNS arousal, is conducive to cognitive openness and improving cognitive performance (Ashby et al., 1999), being perceptually open and more accurate (Fredrickson & Branigan, 2005; Talarico, Berntsen, & Rubin, 2009), and being emotionally (Critchley, 2005) and behaviorally open to change (Janig & Habler, 1999). It is likely that even differences in openness versus performance reported in terms of differences in goal orientation are, in part, a result of arousal of the PEA versus the NEA (i.e., learning goal orientation is better than a performance, proving, or avoidance goal orientation for adaptive or innovative situations) (Seijts, Latham, Tasa & Latham, 2004). These increased forms of cognitive functioning directly benefit student learning and retention.

Arousal of the PEA through the PNS is in contrast to arousal of the NEA. It is emotions like defensiveness, threat, and guilt that arouse the SNS (Sympathetic Nervous System, Sapolsky, 2004). Arousal of the SNS and distinctive activation of the right prefrontal cortex has been shown to be related to specific emotions, such as fear and disgust (Davidson et al., 1990). Other negative affects, such as feeling depressed or anxious and "unpleasant engagement with the environment" have been related to such neural circuits as well (Tomarken et al., 1992).

While the human body does not go into arousal of the SNS or the PNS in a mutually exclusive manner, each arousal can dominate the organism's functioning. Some reviews also contend that each can have a suppressing effect on the other (McEwen, 1998; Sapolsky, 2004). In SNS arousal, a decrease is observed in cognitive, emotional, and perceptual openness and cognitive performance. All of these processes have implications for student learning. For example, with SNS arousal, students will be less open to feedback, less open to the ideas of others, less able to learn, less able to retain their learning, and less able to perform at optimal levels.

Emotional Tone in the Classroom

The relational aspect of learning and development enhance any psycho-physiological arousal because of the social contagion effect. Emotions are contagious (Strazdins, 2000); people "catch" them from each other. The mechanism is a set of mirror neurons present in many parts of the brain (Goleman & Boyatzis, 2008). This was first documented in a series of studies reported and reviewed by Hatfield, Cacioppo, and Rapson (1993). The contagious effect of emotions expands to others in one's environment (Barsade & Gibson, 2007) and even contributes to creating a climate or emotional tone in relationships, teams, and classrooms. Beyond emotions, perceptions, ideas, and even behavior change are a function of the people in our social networks (Christakis & Fowler, 2007, 2009).

Positive Emotions

Given the latest research on PNS and SNS, we now have a greater understanding of the importance of the PEA and positive emotions in general. Research has shown that positive emotions broaden the cognitive repertoire (Fredrickson, 1998, 2000, 2001)

and influence performance on cognitive tasks, such as creative problem solving and the ability to see “alternative cognitive perspectives” (Ashby et al., 1999, p. 531). For example, Fredrickson found that “positive emotions broaden attention, thinking, and action and build physical, intellectual, and social resources” (1998, p. 311; see also Fredrickson & Losada, 2005). Positive emotions, over time, enable a more complex understanding of others (Waugh & Fredrickson, 2006).

One of the most recent critical findings in the research on emotion is the importance of the frequency of positive to negative emotions. Research has shown that the frequency of positive emotion versus negative, as opposed to intensity, is a key determinant of the outcomes described above (see Diener, Sandvik, & Pavot, 1991; Fredrickson & Losada, 2005; Losada & Heaphy, 2004; Waugh & Fredrickson, 2006). Regardless of whether the relationship in question is a dyadic, committed relationship (Gottman, 1994), an organizational team (Losada & Heaphy, 2004), within an organization (Cameron, 2008), or between a parent and child (Carvell & Strand, 2003), these studies reveal a range between 3 and 9 to 1 (depending on the study)—but most are around 5 positive to 1 negative statements or experiences—remarkably predicts an increase in cognitive capacity, human performance, and better relations (Cameron, 2008).

Thus, the overall emotional tone of the instructor and the emotional tone in the classroom matter. The emotional tone will influence stress levels and how well students understand each other, how much cognitive capability and retention is activated, and the level of interpersonal connection that will be developed among the students. Positive emotions and negative emotions managed in a positive manner can create strong support within the classroom and other developmental networks (Frost, 2003; Kahn, 2005) among students. This, in turn, will help students deal with the stress by not allowing stress levels to become so elevated that they impede learning.

Arousing the PEA in the Classroom: A Look at Coaching with Compassion

We propose that one of the most effective means to help students and faculty lower the stress associated with learning is by arousing the PEA to activate the PNS through what we call coaching with compassion. Coaching has become a critical part of leadership and management development activities in organizations (Feldman & Lankau, 2005) and in educational settings (Parker, Hall, & Kram, 2008). Coaching allows people to explore their concerns with another person, receive feedback from others, and have someone they can account to for their learning and development.

Yet, coaching in organizations can often turn into working toward getting people to comply with another’s demands or needs, which we call *coaching for compliance*. Instead, we speak of a different kind of coaching that is not focused on compliance but instead maximizes the human need for an imbalance of positive emotion, to exercise one’s agency, build competence, and foster positive interactions (Deci & Ryan, 2002). The coaching we speak of focuses on *coaching with compassion* rather than compliance and leverages (1) what we know about adults’ ability to change in sustainable ways, (2) what we know leads to positive, sustainable influence (Boyatzis, 2008; Deci & Ryan, 2002), and (3) what we know about the importance of positive emotions and positive connections (Dutton & Raggins, 2007). Coaching for compliance

often ignores a key tenet self-determination theory (Deci & Ryan, 2002), which states that engaging a person's motivation to learn or change is more critical to sustained development and change than getting extrinsic conformity or agreement.

One set of authors defined compassion as having three components: (1) empathy or understanding the feelings of others, (2) caring for the other person, and (3) willingness to act in response to the person's feelings (Boyatzis et al., 2006). Compassion, as they defined it, requires the presence of all three components. Coaching with compassion enacts what we know about the power and benefit of an overall, positive emotional tone, and we believe it is an untapped means to lower student stress levels and increase learning and retention in education. Coaching with compassion is focused on helping the person being coached (i.e., the coachee) achieve sustained, desired learning or change by doing it in a way that is self-directed by the coachee.

Peer Coaching with Compassion

A particular type of coaching, peer coaching, is an area of growing interest in both corporate and educational settings (Parker et al., 2008). Peer coaching has been viewed as having the following four components: "equal status of partners," "focus on personal and professional development of both peers," "integration of reflection on practice to identify critical incidents for focus," and "emphasis on process as well as content that facilitates leadership skill development" (Parker et al., 2008. p. 480). In sum, peer coaching is about forming developmental relationships that help peers with their intentional learning and change efforts. We propose that peer coaching with compassion in dyads may be a way to reduce student stress, increase student engagement and connection, and increase student learning. We define peer coaching with compassion as: high quality connections with an overall positive emotional tone wherein the coach's primary commitment is to the coachee's self-directed learning and development.

At the start of a semester, students are grouped together and trained on what it means to be a peer coach (e.g., Parker et al., 2008). Namely, they are responsible to use active listening and be a "sounding board" for their peer. Further, we emphasize that the focus of their coaching is not about them as the coach or to lead their peer coach in some coach-directed manner. Instead, we inform the students that their main objective is to be aids to the coachee in helping the coachee achieve his or her self-directed development and to support their peer in that process. Next, we train our students in basic coaching techniques, such as active listening, projection avoidance, and asking open versus closed questions (e.g., Kilburg, 2000). Finally, we work to build their understanding of peer coaching by emphasizing the need to coach for compassion (not compliance).

With a basic foundation of coaching with compassion established, we next use a variety of exercises (i.e., peer coaching discussions) throughout the semester to help the students formulate high quality connections and foster the PEA (for examples of such exercises see Cameron, 2008, Fredrickson, 2009; or McKee, Boyatzis, and Johnston, 2008). For us, high quality connections, or resonant relationships, consist of an overall positive emotional tone and a sincere interest in each other's learning and development.

A key component of fostering an overall emotional tone via the PEA involves creating opportunities for students to discover and discuss their ideal self and their key strengths: (1) an image of a desired future, (2) hope that one can attain it, and (3) inclusion of one's core identity. Depending on the type of course, this could be a series of discussions focused on helping students form and articulate their ideal self in relation to the subject matter for the course, their degree program, their profession, or their life. As students share what is important to them in terms of their ideal self (e.g., their desired future, best ways they learn, positive experiences or successful moments in their past, what they personally value, individuals who helped them become who they are today, those who surround them now and support the students' development), positive and affirming emotions and discussions emerge. Such discussion can be the "kick-off" to a given class session or have a larger role in class period or the duration of a course.

Consequently, the PNS is aroused and social connections and appreciation for the other and themselves is fostered. This can occur for both the coach who is working to suspend self and listen to, understand, and care about his or her peer, and for the person being coached who is sharing important and meaningful aspects of his or herself with another. With the PNS active via an aroused PEA, supportive developmental networks are developed and learning and learning retention increase while stress and catalysts of stress are reduced. Research has shown that these positive connections, in turn, increase commitment to one's work and to others (Roberts & Dutton, 2009).

Possible Limitations

Although coaching with compassion may offer many benefits toward student stress reduction, we present two possible limitations and discuss each. First, for some students coaching with compassion may be a stressful experience in and of itself. Coaching with compassion will require some degree of self-disclosure, and there are some students who initially may struggle with talking about themselves. To counter this possibility, we recommend faculty prepare students for coaching by providing an example of a coaching session (e.g., model for the class a coaching discussion). This will allow students to better understand the nature and purposes of the coaching session. It will also allow the instructor to ask students to comment on what they observed and how they might add to or improve upon the coaching questions that were asked. All this may diffuse concerns about the process and self-disclosing.

Second, coaching with compassion will take time away from the "core curriculum" of the course. On the other hand, we think the experience of students coaching with compassion will add to the development of social networks as students get to know each other in the coaching sessions and, as hypothesized, will reduce student stress levels as they activate the PNS. We see these benefits outweighing the costs of time spent on them.

Educational Alternatives beyond Coaching

In addition to coaching with compassion, we propose four additional remedies to assist educators in reducing stress in the classroom. Moreover, each of these represents a direction for future research to measure their impact in student stress

reduction. A few of the alternatives may be familiar to experienced educators, for they are not new ideas, but we believe they have not been considered as stress related educational implications.

First, we recommend educators establish reflective practice and reflective writing capability (Ferris, 1998; Rosenberg, 2010; Seibert & Daudelin, 1999) in students. Writing during and about their experiences in a course can help students make sense of their experiences and guide them in how to respond to the challenges they face. Research clearly shows that when individuals systematically and constructively reflect on their experiences, their learning increases dramatically (Seibert & Daudelin, 1999; Raelin, 2008). In addition, this research has shown that writing and reflection are essential to retained learning in that they clarify thinking, create commitment to ideas, and empower the ability to more effectively communicate ideas to others. Quinn (2004) notes “We complain endlessly about the loss of balance in our lives and the pain of burnout. We assume that there is no place for reflection...In this distorted world, where we have institutionalized the split of action and reflection, we are trapped in the vortex of slow death. People often recognize the problem but lack the courage to do anything about it” (p. 99).

There are important links between reflective practice and the positive emotions related to happiness (Rosenberg, 2010) that need to be considered and leveraged in the student experience. We can begin to do this by adding the development of reflective skill as part of our core curriculum in schools. Not only will this help students understand themselves, but the setting provides an opportunity for students to practice in a relatively nonthreatening environment with others who are engaged in the same. This skill can be combined with training students on other stress reduction techniques such as deep breathing, imagery, and relaxation practices (Hobson & Delunas, 2009). These forms of reflective practice help students become more aware of when they are starting to feel stressed and provide practical behaviors they can implement to reduce their stress. Reflective practice will serve students in the years they are with us and, perhaps more importantly, it may give them the courage and ability to save themselves from the “slow death” of which Quinn (2004) speaks.

Second, we suggest educators assess the impact of grading on a curve as it relates to student and faculty stress. Initial research suggests that grading on a curve provokes student and faculty stress (Roth, 2000). The mindset often behind grading on a curve is that test scores or a semester’s graded work should be normally distributed across the students. This assumes that the tests or assignments truly measure learning and that assigned grades accurately reflect student performance. Yet, few faculty take the time to empirically assess whether there is a significant relationship between student scores and student knowledge or competence. We cannot blame them for this because testing for such would be quite difficult, but mathematical models and Monte Carlo simulations show that the assumption that normally distributed grades accurately reflect grades based on student exam preparation is questionable at best (Kulick & Wright, 2008).

Roth (2000) traced the mathematical history of the Bell-Curve and showed the flaws associated with applying this practice to assigning end-of-the semester grades. For example, the sample size of a classroom hardly qualifies for the original intent of the Bell-Curve, which assumes very large sample sizes will reflect a normal distribution

and that the variables will not redefine themselves over the course of time. How many of us have had students who “woke up” in our classes in the middle of the semester and decided they wanted to engage and perform—redefining their performance along the way?

Third, we recommend providing students opportunities to assess their performance rather than simply testing for memorization of facts or formulas. Students like to test their learning by being able to perform on tasks that have them implement what they learn. Specht and Sandlin (1991) showed that the half-life of accounting knowledge from the first required course in accounting at a top MBA program was 6 ½ weeks. On the other hand, using pedagogy like experiential methods helped increase student retention. But the ultimate benefit might be to shift assessment away from approaches that primarily lead students to “cram and regurgitate,” to instead allowing students to show how and where they can use their new knowledge and abilities. For example, when being assessed in chef training during the Culinary Institute of America’s long program, the students are not asked to describe the ingredients in *tom-yon-gung* soup or *coq au vin*. They are asked to produce the soup for 4 or the *coq au vin* for 6, which is then smelled, examined visually and tasted by expert chefs (Ruhlman, 2001).

Finally, support services should be engaged to help students with stress reduction in more targeted ways. Offering students counseling and advisement services outside of the classroom has already done much to help students to learn how to cope with the stresses of getting an education. On the other hand, faculty should be better trained on how to recognize signs of student stress in the classroom and on ways faculty can evaluate their teaching style and curriculum to increase learning by reducing stress in the classroom.

Conclusion

Stress is an inherent aspect of life and education. All indications seem to show that stress levels are increasing as our world becomes more competitive, more complex, and more uncertain. We argue instructors need to accept that one of their responsibilities, as the *managers* of their classrooms, is to mitigate the stress levels of their students to make learning and retention of learning more likely. Instructors can do this by working to arouse the PEA such that an overall positive emotional tone is established. We propose peer coaching with compassion and several other alternatives as key activities that will aid instructors in achieving these objectives.

References

- Ashby, G.F., Isen, A.M., Turken, A.U. (1999). A neuropsychological theory of positive affect and its influence on cognition. *Psychological Review*, 106, 529-550.
- Aspinwall, L. G., & Staudinger, U. M. (Eds). (2003). *A psychology of human strengths: Fundamental questions and future directions for a positive psychology*. Washington, D.C.: American Psychological Association.
- Augier, M., & March, J.G. (2007). The pursuit of relevance in management education. *California Management Review*, 49, 129-145.
- Ayan, S. (2009, April/May/June). Laughing matters: Seeing the bright side of life may strengthen the psyche, ease pain, and tighten social bonds. *Scientific American Mind*, 24-31.
- Barsade, S., & Gibson, D. (2007). Why does affect matter in organizations? *Academy of Management Perspectives*, 21(1), 36-59
- Bennis, W. (2010). Comment on "regaining lost relevance". *Journal of Management Inquiry*, 19, 22-24.
- Bennis, W., & O'Toole, J. (2005). How business schools lost their way. *Harvard Business Review*, 83(9), 151-152.
- Boyatzis, R.E. (2006). An overview of intentional change from a complexity perspective. *Journal of Management Development*, 25, 607-623.
- Boyatzis, R. E. (2008). Leadership development from a complexity perspective, *Consulting Psychology Journal*, 60(4), 298-313.
- Boyatzis, R.E., Smith, M.L., & Blaize, N. (2006). Sustaining leadership effectiveness through coaching and compassion: It's not what you think. *Academy of Management Learning and Education*, 5, 8-24.
- Brockner, J. & Higgins, E. T. (2001). Regulatory focus theory: Implications for the study of emotions at work. *Organizational Behavior and Human Decision Processes*, 86, 35-66.
- Cameron, K. (2008). *Positive leadership: Strategies for extraordinary performance*. San Francisco, CA: Berrett-Koehler Publishers Inc.
- Cavanaugh, M.A., Boswell, W.R., Roehling, M.V., & Boudreau, J.W. (2000). An empirical examination of self-reported stress among U.S. managers. *Journal of Applied Psychology*, 85, 65-74.
- Cavell, T.A., & Strand, P.S. (2003). Parent-based interventions for aggressive, antisocial children: Adapting to a bilateral lens. In L. Kuczynski (Ed.), *Handbook of dynamics in parent-child relations* (pp. 395-419). Thousand Oaks, CA: Sage.
- Christakis, N. A. & Fowler, J.H. (2007). The spread of obesity in a large social network over 32 years. *The New England Journal of Medicine*, 357, 370-379.
- Christakis, N. A. & Fowler, J.H. (2009). *Connected: The surprising power of social networks and how they shape our lives*. Boston, MA: Little Brown.
- Christensen, C.M., & Eyring, H.J. (2011). *The innovative university*. San Francisco, CA: Jossey-Bass.
- Critchley, H.D. (2005). Neural mechanisms of autonomic, affective and cognitive integration. *The Journal of Comparative Neurology*, 493, 154-166.
- Datar, S.M., Garvin, D.A., & Cullen, P.G. (2010). *Rethinking the MBA: Business education at a crossroads*. Boston, MA: Harvard Business Press.

- Davidson, R.J., Ekman, P., Saron, C.D., Senulis, J.A. and Driesen, W.V. (1990). Approach-withdrawal and cerebral asymmetry: Emotional expression and brain physiology I. *Journal of Personality and Social Psychology*, 58, 330-341.
- de Carvalho, C., Gadzella, B., Henley, T., & Ball, S. (2009). Locus of control: Differences among college students' stress levels. *Individual Differences Research*, 7, 182-187.
- Deci, E.L., & Ryan, R.M. (2002). *The handbook of self-determination research*. Rochester, NY: University of Rochester Press.
- Dickerson, S.S. & Kemeny, M.E. (2004). Acute stressors and cortisol responses: A theoretical integration and synthesis of laboratory research. *Psychological Bulletin*, 130, 355-391.
- Diener, E., Sandvik, E., & Pavot, W. (1991). Happiness is the frequency, not the intensity, of positive versus negative affect. In F. Strack, M. Argyle, & N. Schwarz (Eds.), *Subjective well-being: An interdisciplinary perspective* (pp. 119-139). Elmsford, NY: Pergamon Press.
- Druskat, V.U. (2005). Scholarship that works. *Academy of Management Journal*, 48, 952-955.
- Dutton, J.E., Ragins, B.R. (2007). *Exploring positive relationships at work: Building a theoretical and research foundation*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Ekman, P., Davidson, R.J. and Friesen, W.V. (1990). The Duchenne smile: Emotional expression and brain physiology II. *Journal of Personality and Social Psychology*, 58, 342-353.
- Estrada, C. A., Isen, A. M., & Young, M. J. (1994). Positive affect improves creative problem solving and influences reported source of practice satisfaction in physicians. *Motivation and Emotion*, 18, 285-299.
- Estrada, C. A., Isen, A. M., & Young, M. J. (1997). Positive affect facilitates integration of information and decreases anchoring in reasoning among physicians. *Organizational Behavior and Human Decision Processes*, 72, 117-135.
- Feldman, D.C., & Lankau, M.J. 2005. Executive coaching: A review and future research agenda. *Journal of Management*, 31, 829-848.
- Ferris, W.P. (1998). Fear, stress, and second-guessing in leadership decision making: Using interior monologues, reflective nonfiction, and spiritual approaches. *Journal of Management Education*, 22, 26-48.
- Fredrickson, B.L. (1998). What good are positive emotions? *Review of General Psychology*, 2, 300-319.
- Fredrickson, B.L. (2000). Why positive emotions matter in organizations: Lessons from the broaden-and-build model. *The Psychologist Manager Journal*, 4, 131-142.
- Fredrickson, B.L. (2001). The role of positive emotions in positive psychology. *American Psychologist*, 56, 218-226.
- Fredrickson, B.L. (2009). *Positivity*. New York, NY: Random House.
- Fredrickson, B.L. & Branigan, C. (2005). Positive emotions broaden the scope of attention and thought-action repertoires. *Cognition & Emotion*, 19, 313-332.
- Fredrickson, B.L., & Losada, M. F. (2005). Positive affect and the complex dynamics of human flourishing. *American Psychologist*, 60, 678-686.
- Frost, P.J. (2003). *Toxic emotions at work*. Boston, MA: Harvard Business School Press.

- Fuller, G. (2006). HR fears for employee health as work stress grips nation. (cover story). *Personnel Today*, 1. Retrieved from Business Source Complete database.
- Goleman, D., & Boyatzis, R. (2008). Social intelligence and the biology of leadership. *Harvard Business Review*, 86(9), 74-81.
- Gottman, J.M. (1994). *What predicts divorce? The relationship between marital processes and marital outcomes*. Northampton, MA: Erlbaum.
- Hatfield, E., Cacioppo, J.T., & Rapson, R.L. (1993). *Emotional contagion*. New York, NY: Cambridge University Press.
- Higgins, E.T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 94(3), 319-340.
- Higgins, E.T., Roney, C.J.R., Crowe, E., & Hymes, C. (1994). Ideal versus ought predilections for approach and avoidance distinct self-regulatory systems. *Journal of Personality and Social Psychology*, 66(2), 276-286.
- Hobson, C.J., & Delunas, L. (2009). Efficacy of different techniques for reducing stress: A study among business students in the United States. *International Journal of Management*, 26, 186-196.
- Insel, T.R. (1997). A neurobiological basis of social attachment. *American Journal of Psychiatry*, 154, 726-735.
- Isen, A. M., Clark, M., Shalke, T. E., & Karp, L. (1978). Affect, accessibility of material in memory, and behavior: A cognitive loop? *Journal of Personality and Social Psychology*, 36, 1-12.
- Isen, A. M., Daubman, K. A., & Nowicki, G. P. (1987). Positive affect facilitates creative problem solving. *Journal of Personality and Social Psychology*, 52, 1122-1131.
- Isen, A. M., & Reeve, J. (2005). The influence of positive affect on intrinsic and extrinsic motivation: Facilitating enjoyment of play, responsible work behavior, and self-control. *Motivation and Emotion*, 29, 297-325.
- Janig, W. & Habler, H-J. (1999). Organization of the autonomic nervous system: Structure and function. In O. Appendzeller (Ed.), *Handbook of Clinical Neurology: The Autonomic Nervous System: Part I: Normal Function*, 74, 1-52.
- Kahn, W.A. (2005). *Holding fast: The struggle to create resilient caregiving organizations*. New York, NY: Brunner-Routledge.
- Khurana, R. (2007). *From hire aims to hired hands: The social transformation of American business schools and the unfulfilled promise of management as a profession*. Princeton, NJ: Princeton University Press.
- Kilburg, R.R. (2000). *Executive coaching: Developing managerial wisdom in a world of chaos*. Washington, DC: American Psychological Association.
- Kulick, G. & Wright, R. (2008). The impact of grading on the curve: A simulation analysis. *International Journal for the Scholarship of Teaching and Learning*, 2(2). Retrieved from: http://academics.georgiasouthern.edu/ijsotl/v2n2/articles/PDFs/Article_Kulick_Wright.pdf
- Lorsch, J.W. (2009). Regaining lost relevance. *Journal of Management Inquiry*, 18, 108-117.
- Losada, M.F., & Heaphy, E. (2004). The role of positivity and connectivity in the performance of business teams. *American Behavioral Scientist*, 47, 740-765.

- Marino, S. (1997). The stress epidemic. *Industry Week*, 246, 14.
- McEwen, B.S. (1998). Protective and damaging effects of stress mediators. *New England Journal of Medicine*. 338, 171-179.
- McEwen, B.S. & Stellar, E. (1993). Stress and the individual: Mechanisms leading to disease. *Archives of Internal Medicine*, 153(18), 2093-2101.
- McKee, A. Boyatzis, R.E., Johnston, F. (2008). *Becoming a resonant leader: Develop your emotional intelligence, renew your relationships, sustain your effectiveness*. Boston, MA: Harvard Business School Press.
- Parker, P., Hall, D.T., & Kram, K.E. (2008). Peer coaching: A relational process accelerating career learning. *Academy of Management Learning & Education*, 7, 487-5003.
- Pryor, J.H., Hurtado, S., DeAngelo, L., Blake, L.P., & Tran, S. (2011). *The American freshman: National norms for fall 2010*. Los Angeles: University of California Press.
- Quinn, R.E. (2004). *Building the bridge as you walk on it: A guide for leading change*. San Francisco: Jossey-Bass.
- Raelin, J.A. (2008). *Work-based learning*. San Francisco, CA: Jossey-Bass Publishers
- Reisberg, L. (2000). Student stress is rising, especially among women. *Chronicle of Higher Education*, 46(21), A49. Retrieved from Academic Search Premier database.
- Roberts, L.M., & Dutton, J.E. (Eds.). (2009). *Exploring positive identities and organizations: Building a theoretical and research foundation*. New York, NY: Taylor & Francis Group, LLC.
- Rosenberg, L.R. (2010). Transforming leadership: Reflective practice and the enhancement of happiness. *Reflective Practice: International and Multidisciplinary Perspectives*, 11(1), 9 – 18.
- Roth, W. (2000). Our grading system throws kids a curve. *Education Digest*, 65(8), 27.
- Ruhlman, M. (2001). *The soul of a chef: The journey toward perfection*. New York, NY: The Penguin Group, Inc.
- Sapolsky, R.M. (2004). *Why zebpiorra's don't get ulcers (3rd Edition)*. New York, NY: Harper Collins.
- Seegerstrom, S.C., & Miller, G.E. (2004). Psychological stress and the human immune system: A meta-analytic study of 30 years of inquiry. *Psychological Bulletin*. 130, 601-630.
- Seibert, K.W., & Daudelin, M.W. (1999). *The role of reflection in managerial learning: Theory, research, and practice*. Westport, CT: Quorum.
- Seijts, G.H., Latham, G.P.O., Tasa, K., & Latham, B.W. 2004. Goal setting and goal orientation: An integration of two different yet related literatures. *Academy of Management Journal*. 47, 227-239.
- Sinha, N., & Sharma, R. (2009). Sources of stress for management students: A descriptive analysis. *The Icfai University Journal of Soft Skills*, 3(1), 56-66.
- Specht, L. and Sandlin, P. (1991). The differential effects of experiential learning activities and traditional lecture classes in accounting. *Simulations and Gaming*, 22, 196-210.
- Stixrud, W.R. (2012). Why stress is a big deal. *Journal of Management Education*, 36(2), 135-142.

- Strazdins, L. (2000). Emotional work and emotional contagion. In Neal Ashkanasy, Wifred Zerbe, and Charmine Hartel (Eds.). *Emotions in the workplace: Research, theory, and practice* (pp. 232-250). Westport, CT: Quorum Books.
- Talarico, J., Berntsen, D., & Rubin, D. (2009). Positive emotions enhance recall of peripheral details. *Cognition & Emotion, 23*, 380-398
- Tillson, T. (1997). Is your career killing you? *Canadian Business, 70*, 78-84.
- Tomarken, A.J., Davidson, R.J., Wheeler, R.E. & Doss, R.C. (1992). Individual differences in anterior brain asymmetry and fundamental dimensions of emotion. *Journal of Personality and Social Psychology, 62*, 676-687.
- Twenge, J.M., Gentile, B., DeWall, C.N., Ma, D., Lacefield, K., & Schurtz, D.R. (2010). Birth cohort increases in psychopathology among young Americans, 1938-2007: A cross-temporal meta-analysis of the MMPI. *Clinical Psychology Review, 30*, 145-154.
- Waugh, C.E., & Fredrickson, B. (2006). Nice to know you: Positive emotions, self-other overlap, and complex understanding in the formation of a new relationship. *The Journal of Positive Psychology, 1*, 93-106.