Optimizing the role of cognitive resilience in the classroom to moderate the impact of ego depletion in Higher Education

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Abstract
The literature review presented in this paper begins with a systematic investigation of anxiety/stress and ego depletion with the goal of proposing a potentially benefitting cognitive therapeutic strategy that faculty/staff members can employ to empower students as they attempt to mitigate the detrimental impact of ego depletion. This theoretical review also highlights some models that analyze stress in terms of resources conservation to provide a starting point for developing policies and strategies to reduce the stress experienced by students. These findings may have many benefits in terms of finding new ways to explain and address the psychological issues experienced by students.
“Ma’am, you just don’t understand, this place just chews you up and spits you out. I don’t even know how to manage all of the demands placed on me. I don’t think that I will be able to pass this class...”

–Plebe

In the quote above, the Cadet was expressing his frustration with his experiences juggling the academic and military demands of attending the United States Military Academy. The transition to West Point may involve a significant amount of emotional, psychological, and physiological stress due to varying experiences which may include excessive anxiety, negative thoughts, and overwhelming physiological responses especially during evaluative situations. Although, the above Cadet had fulfilled the requirements for entry into the Academy, during a period of overwhelming cognitive load, he questioned his abilities and capabilities and the research in Higher Education suggests that he is not alone. The ability to regulate one’s affect and emotional responses to stress is a critical component of self-regulation and achieving one’s goals. Therefore, an individual’s inability to regulate in social and non-social environments is critical to effective cognitive functioning.

As an instructor of an introductory psychology course, General Psychology for Leaders, I have the invaluable opportunity of witnessing Cadet’s integration into the West Point experience. In the following paper, I provide an overview of cognitive, educational and psychological research literature to propose a conceptual framework that attempts to understand the impact of stress, performance anxiety and ego depletion on cognitive processes. These conceptual frameworks are presented with the goal of identifying the myriad of stressors that students may experience and highlighting key strategies that faculty and staff members can incorporate both in and out of the classroom to support and empower students. Understanding these processes has potential applications across a broad spectrum of human behavior and educational contexts. It will be in these interactions and experiences that students will be able to maximize their intellectual and creative resources rather than having them depleted via the use of “cognitive distortions” that lead to psychological distress which results in ego depletion.

The impact of self control regulation and stress

One of the most well established findings in the psychological research literature is that the transition to Higher Education can be an extremely challenging period for students (Dixon, Robinson, & Kurpius, 2008; Dyson & Renk, 2006; Wells, 2007). While, some students show a strong capacity to overcome any challenges and adapt to these changes, some students are not able to develop a sense of mastery that allows them to fulfill their potential (Dreke, 2010).

Early psychologists and researchers such as William James (1890), Watson (1913), Freud (1957), and Skinner (1963) emphasized that the impact of social behaviors and interactions are a direct result of how resilient an individual’s ego’s is to challenges. Responses to these challenges become processes and habits that the individual resorts to in times of need. These findings are a critical component of self-regulation which predicts that an individual’s ability to remain adaptive and engages in goal oriented behavior when achieving a relevant goal, can allow them to overcome the impulse and/or
drives that may possibly result in a deviation from their goals (Metcalfe & Mischel, 1999).

Research by Ross, S.E., Niebling, B.C. & Heckert, T.M. (1999) noted that it is an individual’s perception and interpretation of demands placed upon them that causes harm, not the demands themselves. High levels of stress can affect memory, concentration and an individual’s ability to solve problems thus impacting their ability to learn and perform academically. A large body of research has identified self-control as a critical component for successful performance and for focusing attention on task relevant information under pressure (Englert & Bertrams, 2012). Self-control is described as the process of “volitionally controlling or overriding predominant impulses or habitual tendencies” and self-control is central for impulse regulation, emotion regulation, and attention regulation (Bertrams, Englert & Dickhauser, 2010; Schmeichel & Baumeister, 2010). However, self-control is a limited resource that can be depleted after a certain time and it is not immediately replenished (Baumeister et al., 1994). This state is referred to as ego depletion and this state is prone to worse self-control performance when an individual experiences stressful and anxiety arousing conditions that lead to performance decrements. While, stress may have a positive effect in enabling individuals to respond effectively, for some individuals, the recurring physiological markers associated with the instinctive “fight or flight” response can be overwhelming. Therefore, if self-control is depleted, an individual is more likely to experience the negative effects of anxiety and stress on performance under pressure.

According to Muraven, Rosman, and Gagne (2007) “self-control that feels more externally determined is more depleting than self-control that feels more personally chosen…it appears that even small changes in feelings of autonomy surrounding the activity can affect how depleting the task is”. One of the major findings of this review was that the possibility of counteracting the depletion of self-control strength could be to focus on the level of autonomy a situation grants to an individual (Muraven, Gagne, & Rosman, 2008). This finding is critical because there are times when an individual is forced to exert self-control, even though they do not feel the need to and this may result in a negative impulses (Muraven, Gagne, & Rosman, 2008).

Muraven and colleagues (2008) also found that “autonomous self-control exertion is less depleting than self-control exertion that is forced by others, by the situation, or by one’s sense of commitment”. Participants who were working on a primary self-control task in an autonomous supportive environment and felt that they were given a choice whether to exert self-control or not, outperformed individuals in a secondary self-control task who had previously been working on a primary self-control task in a controlling environment, who felt compelled to exert self-control without having a personal choice (Muraven, Rosman, and Gagne, 2007). At the end of the study, it was reported that individuals who made autonomous choices were more successful than individuals who were forced to change their behavior and that autonomous self-control exertion can serve as a buffer against ego depletion effects. This finding has huge implications to help students perform their best when they feel like they are under pressure.

Research by Eysenck (1992) demonstrated that when individuals feel anxious, particularly in anticipation of an important task, they were more likely to report feelings of “drained working memory capacity, decreased self-confidence and deficits in performance”. In a series of studies on the impact of stress and anxiety on self-control
strength on hand eye coordination tasks, Englert and Betrams (2012, 2013) found that preventing the self-control resource from depleting could potentially reduce the negative effects of anxiety on sport performance under pressure. This finding confirms research by Baumeister, Bratslavsky, Muraven & Tice (1998) that indicates that when individuals are forced to execute self-control, even though they do not feel the need to do so, they have to volitionally override their negative approach to obey this enforcement. Students who experience a significant amount of heightened anxiety and stress may be more prone to negative cognitive reactions to evaluative situations whether in the classroom or during their military experiences. This state of mind may cause the individual to experience a significant amount of psychological distress that may be experienced during specific situations, e.g., testing environments, social situations, and may negatively impact their current and future cognitive reactions to evaluative situations that can further impact their psychological well-being and their academic performance.

Successful regulation of one’s thoughts, emotions, and behaviors can contribute to adaptive outcomes for an individual’s personal life, academic pursuits and occupational interests. For young adults transitioning to college, these experiences may be further impacted by their ability to develop cohesive relationships with others, the ability to cope with stressors and problems and susceptibility to negative outcomes. Therefore, it is of marked importance to continue to examine these processes especially during a period of transition in order to further understand how to assist students in developing the capacity to overcome any challenges, adapt to these changes and fulfill their potential.

Motivation and Attentional Focus

Research on students’ academic achievement has indicated that motivation is a key factor in understanding the ways in which students interpret challenging experiences. Motivation is generally divided into 3 categories, intrinsic, extrinsic, and amotivation (Ryan and Deci, 2000). Individuals who are driven by intrinsic motivation experience an internal drive to pursue something for self-satisfaction and extrinsic motivation occurs when an external source acts as a driving force for an individual’s behavior (Ryan and Deci, 2000). In terms of the anxiety that students may experience, amotivation is defined as the relative absence of motivation that is not caused by a lack of initial interest but by the feelings of incompetence and helplessness that an individual may experience when faced with the activity.

Attentional focus may be adversely influenced by many different factors in an individual’s environment and may be adversely influenced by potential distractions that may occur both internally and externally. Examples of internal distractions may be internalized concerns and anxiety about future performance and failure, panicking under pressure, fatigue and motivation (Ryan & Deci, 2000). Research has shown that students with test anxiety experience more psychological distress compared to students without test anxiety (Ahn, Park, Baek, & Chung, 2007). Text anxiety was identified as one of the most significant causes for students’ underachievement and low performance at different stages of their educational experiences (Ahn, Park, Baek, & Chung, 2007). In one of the earliest studies on motivation, Deci and Ryan (2000) found that students who experienced test anxiety expressed low extrinsic motivation and high distress. Students who experienced test anxiety expressed low extrinsic motivation and high distress that impacted their desire to attend classes, led to negative perceptions about their academic
performance which led to reduced extrinsic and intrinsic motivation (Deci & Ryan, 2000).

A significant body of research has examined the impact of stress on individual performance, particularly its role in restricting and narrowing attentional focus. The psychologist, William James originally defined attention as “processing one out of what seem several simultaneously possible objects or trains of thought…implies withdrawal from some things in order to deal effectively with others (James, 1890). For James, individuals had to purposely “attend” to specific thoughts in order for these thoughts to become fixed in the mind. Attentional focus may be adversely influenced by many different factors in an individual’s environment and may be adversely influenced by potential distractions that may occur both internally and externally. Examples of internal distractors may be internalized concerns and anxiety about future performance and failure, panicking under pressure, fatigue and motivation (insert citation here). When students are too fixated on these distractions, they can have an adverse effect on performance. These experiences can divert attention from the task on hand to other is a concept that allows individuals to attend to relevant information in any situation that requires attention (e.g., in a classroom environment). The attentional focus may shift depending on the individuals needs at a specific time.

How to mediate the impact of ego depletion:

A significant body of research has examined the impact of stress on individual performance, particularly its role in restricting and narrowing attentional focus (Baumeister, Gaillot, DeWall, & Oaten, 2006). Roy Baumeister and colleagues have referred to self control as an inner capacity that relies on some limited internal resource or energy (Baumeister & Heatherton, 1996; Muraven & Baumeister, 2000). The central premise of the “resource model” of self control is that engaging in controlled, willful action quickly consumes and depletes limited inner capacity, leaving one in a state of “ego depletion”. Thus, when individuals find themselves in a depleted state, further efforts at self control may be more prone to failure. This finding has been replicated in studies that have demonstrated that exerting self-control on one task impairs performance on subsequent and unrelated self control tasks and impacts an individual’s cognitive, affective, and motivational capabilities. Therefore, during times of change or stress, an individual’s ability to self regulate may become compromised and this may result in a higher likelihood of failure in the midst of stress. Thus, if self-control is viewed as a resource, self control resource depletion can be correlated with increased subjective and physiological effort, fatigue, and task difficulty.

Inzlicht and Schmeichel (2012) present a process model of ego depletion based on research that suggests that all manner of self regulation and self control rely on the same depletable resource that links habit breaking, choice making, rational thinking, response inhibition, mental and physical endurance. Thus, the central prediction of the resource model is that exerting self-control consumes and depletes the resource. Job, Dweck, and Walton (2010) found that personal or lay beliefs about willpower, particularly beliefs about whether it is a limited or unlimited resource, can moderate the ego depletion effect, which suggests that merely believing the premise that beliefs about one’s own mental capacity determine self control performance which may explain why ego depletion affects cognitive performance and self presentation.
Therefore, engaging in self-control requires deliberate attention and vigilance and that expending initial effort demotivates people from expending further effort (Inzlicht and Schmeichel, 2012) argue that. This would suggest that self control failure is the result of individuals not being able to shift attention away from cues, because people fail to notice when control is actually needed. Therefore, ego depletion may be less a result of people being unable to exert control and more about changes in attention so that people fail to notice when control is actually required because the systems that monitors for discrepancies between desired and current states is depleted (Inzlicht and Schmeichel, 2012). One of the most significant findings from this proposed model is that when an individual’s attention is depleted, this forces them to shift their attention away from signs of goal conflict and discrepancy and instead toward signs of possible reward and gratification (Inzlicht & Schmeichel, 2012).

This physiological response may be attributed to the behavioral activation system (BAS) which is related to approach motivation, the fight, flight, freeze system, which mediates reactions to aversive stimuli, and the behavioral inhibition system (BIS) which is sensitive to conflicts that arise within and between the other two systems and is related to conflict monitoring. When the BIS is depleted, individuals become more sensitive to rewards and/or immediate gratification thereby weakening an attentional system sensitive to goal conflicts and showing preference to the attention system sensitive to reward and pleasure which impacts willpower (Vohs & Faber, 2007). During this state, willpower is limited and may be on the lookout for internal signs of depletion or fatigue, and when they detect such signs, they might reduce their motivation and stop exerting effort at self regulation together. This finding may explain why some students may report that performing well academically is important to them but continue to disengage from their academic goals. It may be possible that after engaging in initial acts of control, individuals feel that they have worked hard enough and justify withholding effort on yet another difficult task. This finding might not explain whether it may be possible to distinguish between reduced ability versus reduced motivation. Given the intellectual, physical, and psychological demands that are placed upon students, it becomes critical to understand the ways in which faculty and staff can help students mitigate these challenges.

In a meta-analysis of the failures of self control particularly problematic outcomes of social and clinical significance, Muraven & Baumeister (2000) highlighted four aspects of self control: (1) An individual’s ability to control problematic outcomes is not unlimited in nature and that it is limited; (2) Self control strength can vary across individuals and social occasions and are necessary in determining whether self control operations will be successful or unsuccessful; (3) Exercising self control can be equivalent to utilizing a muscle because exercising self control should undermine subsequent efforts after self control; (4) Self control can be considered as a depletable resource especially if an individual is experiencing conflicting demands, e.g., attempting to suppress emotions and work on another a difficult task/activity, especially if there are constraints in time.

Researchers such as Baumeister, Bratslavsky, Muraven, & Tice (1998) have also demonstrated that self-control is something that can be monitored through disciplined activities to allow for successful performance in many domains. Therefore, by focusing on the ways in which faculty/staff can engage students in overcoming potentially
maladaptive behaviors, we may be able to address the ways in which these interactions may influence student’s academic performance by creating or endorsing autonomy supporting behaviors that not only provide independence but may also inhibit any impulsive responses that may lead to further ego depletion.

**Cognitive Appraisal and Behavioral Therapeutic Techniques**

Research by Baumeister, Bratslavsky, Muraven, & Tice (1998) suggests that self-control is a strenuous act and that as an individual’s ego is depleted, automatic processes become more difficult and each successive attempt to control impulses is less successful than the last. Therefore, for students who are struggling academically or militarily, this approach might explain why their psychological and physiological systems might get worn out as they attempt to inhibit and redirect their behavior and persevere in the face of adversity. This process is referred to as cognitive appraisal and it is a critical component of regulation, for individuals that are experiencing distress, this process is crucial to regulating levels of pressure in order to adjust how one interprets a situation. Ideally, this appraisal can result in productive pressure management and in turn minimize pressure distortion (Weisinger & Pawliw-Fry, 2015). However, for some individuals, the interpretation process can result in additional pressure and anxiety which may further impact student’s engagement and performance due to decision fatigue which may lead to further depletion.

Cognitive behavioral therapists have identified psychological distress as a maladaptive pattern in the way that we think and act. Typically an activating event occurs and the beliefs that the individual holds causes emotional consequences. Researchers like Albert Ellis have described people’s interpretations of external events as being influenced by “beliefs” that can be even more significant sources of distress that can be expressed above and beyond the external situation (Ellis, 1962). These feelings of distress can be very stressful, especially, if the individual believes that he or she does not have the adequate resources to cope with the perceived situation.

Cognitive behavioral therapeutic techniques may be helpful when trying to help make students more self-aware of negative interpretations and develop alternative ways of thinking and behaving with the sole aim of reducing their psychological distress. Albert Ellis (1962) proposed that every individual holds a unique set of assumptions about themselves and that serve to guide them throughout their life and determines their reactions in situations. According to Ellis, people forcefully hold onto illogical ways of thinking and that employing emotive techniques may help them change irrational thoughts (1962). Common irrational assumptions are: (1) the idea that one should be thoroughly competent at everything; (2) it is catastrophic when things are not the way you want them to be; (3) the idea that people have no control over their happiness; (4) the idea that you need someone stronger than yourself to be dependent on; (5) your past history greatly influences your present life; (6) there is a perfect solution to human problems, and it’s a disaster if you don’t find it.

For Ellis (1957), the first three steps in analyzing the irrational beliefs process is thru the ABC Technique of Irrational Beliefs which is comprised of A-Activating Event (the activating event is an event that ultimately leads to some type of high emotional response or negative dysfunctional thinking), B-Belief (the student writes down the negative thoughts that occurred to them), C-Consequences (negative feelings and
dysfunctional behaviors that have ensued). Thus, the negative thoughts are seen as a connecting bridge between the situation and the distressing feelings. According to Ellis, it is not the activating event that causes negative emotional and behavioral consequences but rather that a person interprets these events unrealistically and develops an irrational belief system that contributes to the consequences (1957).

Thus, when faculty/staff members meet with Cadets who they believe may be experiencing high pressured/high valued situations, they can teach them how to challenge their negative thoughts by reframing or re-interpreting the event in a more realistic light (Ellis, 1962). This may help students learn how to develop more rational beliefs as well as healthy coping mechanisms while reducing any anxieties which may result in the potential for ego deregulation. This approach is highly directive, and persuasive as it is aimed at changing cognitions and may benefit students who encounter an academic experience that they classify as high value and experience stress or high levels of anxiety. The above approach may not only facilitate a faculty/student relationship but may also be vital in establishing a protective factor for students who experience ego depletion due to the perception of a high pressure situations.

Conclusion:

“Men are disturbed not by things, but by the views they take of them”

- Epictetus Enchiridion

The psychologist, William James originally defined attention as “processing one out of what seem several simultaneously possible objects or trains of thought…implies withdrawal from some things in order to deal effectively with others (James, 1890). For James, individuals had to purposely “attend” to specific thoughts in order for these thoughts to become fixed in the mind. The anxiety that students may experience during testing situations or academic encounters may be a predictor of emotional and psychological distress and these studies above highlighted the impact of psychological intervention for test anxiety to reduce psychological distress and amotivation. The application of a cognitive behavioral therapy technique to reduce excessive worry and intrusive thoughts to mediate the negative impact of ego depletion.

The current literature review attempted to examine the ways in which ego depletion and stress impact student’s performance on academic tasks. By addressing the above topics, it was proposed that faculty/staff can sustain or create a supportive environment that impacts or prevents students from depleting their self-control resources and excel, even in high pressure contexts using the ABC model, a cognitive behavioral therapy technique proposed by Ellis (1962). Faculty/Staff members may consider providing awareness about test anxiety and its consequences and the availability of psychological resources throughout the session to reduce levels of anxiety and ego depletion. The literature review also attempted to focus on the way in which faculty/staff may engage students in improve their learning behaviors specially to address the ways in which these interactions that influence student’s academic performance by creating or endorsing autonomy supporting behaviors that not only provide independence, especially in high pressured/high valued situations. Therefore, students can begin to learn how to recognize the symptoms of stress or high anxiety before ego depletion sets in. This
dynamic may further facilitate a faculty/student relationship that is vital in establishing a protective buffer. These interventions may also help to reduce student anxiety, amotivation and psychological distress, which may in turn increase intrinsic and extrinsic motivation and a lack (loss) of academic motivation.
REFERENCES


