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The Role of Mindfulness in Academic Stress, Self-Efficacy, and Achievement in College Students

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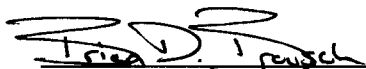
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The Role of Mindfulness in Academic Stress, Self-Efficacy, and
Achievement in College Students

By

Brian D. Brausch


THESIS

Submitted in partial fulfillment of the requirements
for the degree of Masters of Counseling
in the graduate school, Eastern Illinois University
Charleston, IL

2011

I hereby recommend that this thesis be accepted as fulfilling
this part of the graduate degree cited above


Thesis Committee Chair 4/15/11
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*This thesis is dedicated to my wife, Amy.
Whose constant support and encouragement has been
unwavering.
Statistically speaking... you are loved beyond measure.*

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ABSTRACT

This study was designed to assess the predictive quality of specific measures toward academic success in college students. In particular, high school grade point average, (GPA), American College Testing exam scores (ACT), academic stress, academic self-efficacy, and mindfulness measures were used as independent variables to determine their predictive significance toward undergraduate fall 2010 semester GPAs. Data from 268 undergraduate students at Midwestern university were collected and analyzed. Results revealed significant predictive quality of high school GPA and academic self-efficacy toward undergraduate performance. However, ACT scores, academic stress, and mindfulness measures were not found to be predictive of undergraduate semester GPAs. Further analysis showed significant positive correlations between: high school GPA and semester GPA; self-efficacy and semester GPA, ACT and semester GPA, ACT and high school GPA, self-efficacy and stress, and mindfulness and stress.

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Running Head: MINDFULNESS AND ACADEMICS

The role of mindfulness in academic stress, self-efficacy, and achievement in college students

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The role of mindfulness in academic stress, self-efficacy, and achievement in college students

Academic self-efficacy and academic stress are two key factors that influence academic success/achievement. Numerous studies have reported the importance of this relationship upon students' success at the collegiate level (Chemers, Hu, & Garcia, 2001; Davidson & Beck, 2006; Friedlnder, Reid, Shupak, & Cribbie, 2007; Lent, Brown, & Larkin 1984; Pritchard & Wilson 2003; Zajacova, Lynch, & Espenshade, 2005). Additionally, recent research has shed light upon the significance of mindfulness as an aid in reducing stress, improving emotion regulation, and developing greater awareness. This study focuses on mindfulness as a mediating factor between academic stress and self-efficacy towards academic success in first year college students.

Academic Success/Achievement

Success at the collegiate level may be expressed in a variety of ways depending upon the individual's self perception. However, commonly held descriptions of academic success may include: attainment of a degree, acceptable grade point average, and /or retention of career and life skill sets necessary for employability and professional development. A student's success at the collegiate level demonstrates their ability to garner information and skills necessary to increase their chances of meeting long term personal and career goals (Eunhee, Newton, Downey, & Benton, 2010). According to Kuncel, Crede, and Thomas (2005), academic achievement is an important predictor of performance in other areas of one's life such as job performance, job outcomes, and salary. The connection between academic performance and positive life/job skills and its rewards are evident. Maintaining an acceptable grade point average and completing

courses designed for their career goal demonstrates that the student is meeting the expectations set by the college or university. Universities in turn have a vested interest in assuring the success of their students. The students' academic success demonstrates the institution's ability to prepare and educate its student body for life after college (Eunhee, et. al., 2010).

Investigating the factors that influence, predict and explain academic performance and academic success is of utmost importance to institutions of higher education (Ruban & McCoach, 2005). Universities compete to attract students who will be committed and persist in their education, thus creating revenue for the institution. Efforts from universities to produce successful students, in turn, create additional revenue through alumni contributions. Universities who invest in their students' academic success often reap the rewards of alumni donations from former students who recognize the importance of their college education in regards to their financial success.

Two key measurements used by college admissions to predict an individual's potential collegiate academic ability are a student's high school grade point average (HSGPA), the American College Testing exam (ACT) and/or the Scholastic Assessment Test (SAT). Each university uses distinct criteria for their selection process. However, many schools of higher learning require the reporting of a student's HSGPA along with a composite score from one of the previous mentioned standardized tests. Numerous studies have argued the predictive value of these standardized test scores in relation to university academic success. Studies have shown consistent high criterion related validity (approximately $r = .45$) in relation to college GPA. These tests also correlated significantly to students' academic persistence, study habits, and degree attainment

(Hezlett, Kuncel, Vey, Ahart, Ones, Campbell, & Camara, 2001). However, some researchers and college personnel have reservations regarding standardized tests. Even though standardized cognitive tests and HSGPA have relatively high validity, there remains a significant unexplained variance in student academic performance (Breland, 1998; Payne, Rapley, & Wells, 1973).

An additional point of interest lies within the disparity of standardized test scores among minority and majority groups. Minority students tend to score lower on cognitive ability tests as compared to individuals in the majority. However, little to no significant difference is found in non-cognitive assessments. Assessment of interest, background, and motivation were relatively equal between minority and majority students, with small variances due to demographic groupings and manner in which these tests were used (Hough, 1998; Sackett, Schmitt, Ellingson, & Kabin, 2001). A more recent meta-analysis revealed that non-cognitive factors such as study habits, study skills, study motivation, along with other additional factors accounted for incremental variance in academic success beyond SAT/ACT scores and HSGPA (Crede and Kuncel, 2008). Some of these studies suggest that non-cognitive factors may play a key role in predicting academic performance. For instance, a student's motivation and self-perception may have a significant influence on one's academic performance. While a student may possess the intelligence or aptitude for academics, their lack of motivation, work ethic, or maturity may hinder their ability to be successful at the collegiate level. Additional research is being considered for implementing non-cognitive performance measures into university selection processes. Many universities have begun to diminish the importance of

cognitive standardized test scores when considering students for admission, with some institutions making reporting of SAT/ACT scores optional.

Through the admissions process, universities endeavor to attract potentially successful students. In order to maintain student productivity and academic success, many institutions of higher learning provide services such as academic success centers, career, academic, and advising interventions, tutoring programs, first year adjustment seminars, and counseling. Higher than average drop-out rates may indicate that a university is not providing enough supportive services to meet the needs of their student population. This, in turn, decreases revenue and affects the overall supportive services universities are able to provide to the student body.

Students and universities maintain a reciprocal relationship to ensure each other's overall success. A student's success reflects upon the ability of the university to teach as well as the student's ability to learn. Efforts to maintain and/or increase graduation rates are of paramount concern for all universities.

The aim of this study was to how mindfulness relates to academic success in conjunction with academic self-efficacy and academic stress. Understanding mindfulness and the role it plays within higher education may be seen as an additional factor to improving student academic performance, further increasing university retention rates and overall academic achievement.

Self-Efficacy and Academic Success

Self-efficacy as defined by Bandura (1997) is “the belief in one’s capabilities to organize and execute courses of action required to produce given attainments” (p. 3).

These beliefs affect human functioning in four areas: cognitions, motivation, mood/affect, and depressive states (Bandura, 1997).

Cognitive implications suggest that individuals with high self-efficacy are more likely to set goals for themselves in hopes of attaining lofty aspirations. They tend to visualize their success, think soundly, and commit themselves to the challenges at hand. Conversely, those with low self-efficacy are more likely to focus on how things might go array or dwell on their perceived personal deficiencies. In essence these individuals tend to focus on the problems of the circumstance rather than the possibilities of success.

Motivation is regulated by the beliefs one forms about what they can and can not do, goal setting, anticipation of outcomes, and planned courses of action. Those with high self-efficacy are more motivated in the face of adversity, willing to persevere through more difficult tasks. Self-efficacy can be understood as a determinant factor for motivation as expressed in one's willingness to exert effort to attain goals, time allocated to these goals, and resilience in the face of setbacks and failures.

Emotional states (mood or affect) are strongly influenced by an individual's beliefs about their ability to handle difficult or threatening situations. Stress and depression can be a byproduct of low self-efficacy when individuals face adversity. Those with high self-efficacy feel they can manage problems and are less distressed by acting in ways that make the situation less threatening. These individuals look for solutions to their problems by seeking help from family, friends, and acquaintances. Furthermore, those who have better coping skills are less likely to ruminate on disturbing thoughts, are able to divert attention, calm themselves, and relax, thereby reducing anxiety, stress, and sadness to tolerable levels.

Additionally, individuals with low-self efficacy are more prone to depressive states. Individuals who feel they can not prevent depressive thoughts or control their negative ruminations are more likely to have recurring depressive episodes. Low self-efficacy causes one to have less hope in their ability to overcome defeated mental states, thus causing a downward cycle of depressive thoughts. Finally, these individuals often fail to form satisfying socially supportive relationships, which help to lessen chronic stress and depression.

In summation, individuals with high self-efficacy are more likely to persist while those with low self-efficacy retain low aspirations with little commitment to their goals. These individuals ruminate on their failures and self-doubt instead of looking toward solutions and visions of success. When faced with obstacles, they tend to dwell on the difficulty of the task, consequences of failure, and personal deficiencies while losing faith in their ability to meet the challenges at hand. These people then give minimal effort in the face of difficulty due to their beliefs about the abilities or inadequacies. Often, this lack of self-efficacy leads the individual to give up on goals or tasks, recover slowly from setbacks, and regress toward stressful and depressive states (Bandura, 1997). Schunk (1991) expanded Bandura's (1977) idea of global self-efficacy to the academic realm and defined academic self-efficacy by contrasting it with academic motivation. Schunk defined academic self-efficacy as one's confidence in performing and succeeding in educational tasks at a designated level. Numerous studies have related self-efficacy to achievement in educational settings.

Lent and Brown (1984) examined the relationship between self-efficacy, academic achievement, and persistence in college students pursuing careers in science

and engineering. Forty-two undergraduates (28 male and 14 female) enrolled in a 10-week career/educational planning course designed for students interested in science and engineering occupations. Self-efficacy assessments were given to the students at the beginning and end of the 10-week course, with an additional follow-up assessment two months following the end of the course. Self-efficacy expectations measured the students' perceived ability to complete educational requirements and occupational duties associated with careers in science, engineering, and technology. Level of self-efficacy was assessed by asking participants whether they believed they could complete job expectations and educational requirements in 15 different science and engineering fields. Strength of self-efficacy was assessed by the participants' confidence in their ability to complete the above mentioned tasks. Additional data was collected from university records, including Preliminary Scholastic Aptitude Test (PSAT) scores, high school ranks, college grades, and declared major following participation in the study/course. Results indicated that individuals reporting high-strength self-efficacy persisted longer and achieved higher grades than those with relatively lower ratings. Similar results were observed for those reporting high versus low ratings on level of self-efficacy. Of particular interest, all students reporting high-level and high-strength self-efficacy were enrolled in the technical college for all four years following the initial assessments. However, only 58% of low-level and 50% of low-strength groups persisted in the science and engineering fields. Additionally, measures of academic ability were moderately and positively correlated with self-efficacy scores.

A study by Chemers, Hu, and Garcia (2001) gives additional credence to the relationship between academic self-efficacy and academic success. In their study, first

year students at the University of California, Santa Cruz campuses were given two questionnaires focused on social and academic adjustment. The first questionnaire was disseminated to students that had experienced one quarter of university-level work. The second questionnaire was given close to the end of the spring quarter of the academic year. The first questionnaire provided self-report responses concerning academic and social self-efficacy along with general optimism, ratings of current and expected social support and adjustment, academic performance, and levels of stress and illness. The second questionnaire replicated the same measures as the first, minus reports of self-efficacy and optimism. Three-hundred seventy-three students responded to the first questionnaire with 256 of those individuals responding to the second set of questions. Results demonstrated persuasive evidence for the role of self-efficacy and optimism in relation to academic success and adjustment. Academic expectations and performance were significantly and directly related to academic self-efficacy. Additionally, individuals who entered college with confidence performed better academically than those with lower self confidence. Similarly, individuals who expressed higher expectations for success responded with higher academic performance. Furthermore, after accounting for the possible effect of students' high school grade point averages as a predictor of academic ability and confidence, academic self-efficacy was still found to be significant in both academic achievement and expectation for performance. In essence, academic self-efficacy has predictive power above and beyond the performance of past academic tasks such as high school GPA and aptitude tests. Results of this study reveal that the level of students' self-efficacy is a powerfully significant predictor of academic expectations and performance.

In a study of diverse first generation college students, Majer (2009) also found a positive relationship between academic self-efficacy and performance. Ninety-six adults (68 females and 28 males) were selected from seven introductory undergraduate psychology courses to participate in the study based on their first generation student status. The average age of the students was 24.4 years ($SD = 7.9$). As for ethnicity, 53.1% of the participants were Latino American, 33 % African American, 7.3% European American, and a 6.3% reported other racial groups such as African, Middle Eastern, Native American, which were collapsed into one category.

Assessments were given to the students at the beginning of the semester and four months later (end of the semester). Assessments included the Beliefs in Education Success Test (BEST; Majer, 2006), Life Orientation Test (LOT-R; Scheier, Carver, & Bridge, 1994) and the Self-Mastery Scale (Pearlin & Schooler, 1978) along with sociodemographic and academic information collected from self reports and university records.

The BEST is based on Bandura's (1997) cognitive-behavioral self-efficacy theory which measures one's sense of self-confidence and goal oriented behaviors related to education. The LOT-R assesses an individual's tendency to expect favorable or non-favorable outcomes to various situations. Finally the Self-Mastery Scale (SMS) was used to measure how one views their control over life events. The SMS assesses the extent to which an individual feels they are in control of life circumstances or have more fatalistic views that life is out of their personal control.

Results from the study revealed a significant positive relationship between cumulative GPA and levels of educational self-efficacy for diverse first generation

college students. This data supports the previous two studies suggesting the importance of academic self-efficacy and academic achievement. From this study, academic self-efficacy can be viewed as a predictor of academic performance. Furthermore, while self-efficacy, optimism, and self-mastery were positively and significantly observed between measures, only academic self-efficacy predicted increased GPA.

Stress and Academic Success

Generalized stress has been defined as a state of psychological arousal which occurs when perceived external demands exceeds or taxes an individual's adaptive abilities (Lazarus, 1966). Children and adults alike face a daily onslaught of anxiety inducing situations. Stress related to health, education demands, work environment, and relationships all have their effect on the physical and emotional welfare of the individual. A 2008 poll from the American Psychological Association revealed that 47% of Americans reported significant stress in their lives. Fifty-three percent reported fatigue, 60% reported feelings of irritability or anger, and 52% reported lying awake at night as a result of stress, in addition to other symptoms including lack of interest or motivation, feeling depressed or sad, headaches and muscular tension (APA, 2008). In the past two decades the average work year for couples has increased by nearly 700 hours (Murphy & Sauter, 2003). Stress is a major factor in up to 80% of all work related injuries and 40% of work place turnovers as reported by the American Institute of Stress (Atkinson, 2004). Stress over health concerns has increased, with chronic illnesses like diabetes, arthritis, hypertension, depression and anxiety on the rise in the United States (Praisman, 2008).

While stress is prevalent in many aspects of daily life, this study focuses on stress associated with the adjustment and academic demands of college students. Transitioning

from high school to university constitutes a major life change for many young adults. The increased demands of academic performance, along with adjusting to a new living and social environment, present students with opportunities and experiences of psychosocial development (Tao, Dong, Pratt, Hunsberger, & Prancer, 2000). This transition to college life often reduces contact with family and friends who previously provided social and emotional support. Reduced support in turn affects one's ability to handle external stressors and may lead to increased psychological distress and decreased academic performance (Dwyer & Cummings, 2001).

Up to 60% of college students drop out before attaining a degree, with the majority of these individuals leaving within the first two years (Porter, 1990). Stress was reported as the most common health factor affecting academic performance amongst college students (American College Health Association, 2006). According to a study by Demakis and McAdams (1994), undergraduates who reported increased levels of stress had significantly more physical health problems, along with less overall satisfaction. Studies by Felsten and Wilcox (1992), Pritchard and Wilson (2003), and Russell and Petrie (1992) found an inverse relationship between academic stress and academic performance among undergraduate students. Furthermore, dramatic increases in levels of stress have been reported over the past 30 years for the college student population (Sax, 1997). This increase in levels of stress is likely to adversely affect college retention rates if not addressed or remediated.

Recent studies have examined the relationship between academic stress and academic performance. A study examining the relationship between perceived stress, grade point average, and coping styles was conducted by Struthers, Perry, and Menec

(2000). Two hundred and three college student from a variety of majors participated by providing responses to measures of perceived stress in association with their introductory psychology course. Items centered on how worried, helpless, and/or stressed they felt about their performance. Coping strategies were measured using a version of Carver, Scheier, and Weintraub's COPE scale which assesses various actions, thoughts and strategies associated with routine coping following poor academic performance. In this study the scale was broken down into two measures: Problem-Focused Coping (PFC) and Emotion-Focused Coping (EFC). PFC focused on the actions, thoughts, and strategies a student used to change the source of the stressful event while EFC focused on the actions, thoughts, and strategies directed at managing the emotional distress of the event. The students' motivation was also assessed using questions geared toward measuring one's expectations and desire for success. Finally, students' finale course grades were obtained at the end of the semester.

Results indicated that academic stress is inversely related to academic performance. However, academic stress and course grades were qualified by the students' motivation and coping style. Individuals who engaged in PFC (rather than EFC) were more likely to perform better academically while also demonstrating higher levels of motivation.

Another study by Pritchard and Wilson (2003) evaluated the emotional and social factors to predict academic success at a private Midwestern university. The 218 participants were recruited from Introductory Psychology and Introductory Health and Wellness courses. Participants included 126 females and 92 males, with ethnicity reported as 90% White, 5% African American, 2% Latino, 1% Asian American, 1% Arab

and 1% other. Students were asked to report their current GPA, high school GPA, ACT or SAT scores, current level of education, parent's level of education, and intent to remain in school or intent to drop out. Stress levels were assessed with the questionnaire developed by Kohn, Lafreniere, and Gurevich (1990) which included 55 stressors in which students were asked to respond via a four-point Likert scale. Additional measures concerning perfectionism, self-esteem, coping tactics, affective states, and optimism were used to assess emotional factors. Social factors included measures of introversion/extroversion, involvement in romantic relationships, living situation, membership in various campus organizations, and alcohol consumption behaviors.

Results indicated that student performance and retention were related to social and emotional health factors. Similar to the previously mentioned study, Pritchard and Wilson reported a correlation between higher stress levels and lower GPA. Individuals who indicated their intent to drop out reported lower levels of self-esteem and more fatigue than their peers. Conversely, those who intended to stay in school possessed better coping skills. Thus, the study suggests that individuals with positive coping styles are better suited at dealing with the multitude of emotional stressors associated with academic life. Additionally, social factors (with the exception of frequent alcohol consumption) had less of an impact on a student's academic performance as compared to emotional factors. Finally, social factors were not predictive of intent to drop out of college in this sample.

Finally, in a study by Akgun and Ciarrochi (2003), researchers examined the moderating effect of learned resourcefulness on academic stress and academic performance. The sample consisted of 141 participants, 45 male and 96 female first year

Psychology students from an Australian university. Students were given two questionnaires, the Self-Control Schedule (SCS) and the Undergraduate Stress Questionnaire (USQ). Rosenbaum's (1980) Self-Control Schedule (SCS) is a 36-item self-report questionnaire used to assess an individual's range of self-control behaviors and their likelihood of using these behaviors when faced with everyday problems. This learned resourcefulness has been defined as "an acquired repertoire of behavioral and cognitive skills with which the person is able to regulate internal events such as emotions and cognitions that might otherwise interfere with the smooth execution of a target behavior" (Rosenbaum, 1990, p. xiv). Rosenbaum suggests that individuals who demonstrate learned resourcefulness are able to minimize the negative effects of stress, thus improving performance. Academic stress was measured by use of Crandall, Preisler, and Aussprung's (1992) Undergraduate Stress Questionnaire (USQ). This survey consisted of 20 academic stress items. Students indicated which events they experienced during the academic year, and if experienced, to what degree it caused the individual stress. Examples of these items were "working while in school," or "did badly on a test." Students' first year GPAs were obtained at the end of the academic year.

Results indicated a significant relationship between academic performance and academic stress. Higher levels of academic stress correlated with lower grades. Additionally, individuals who reported higher learned resourcefulness scores obtained higher GPAs. Results indicated that stress had a greater effect on the GPAs of low resourceful students than on high resourceful individuals. This study indicated that the negative impact of stress was moderated by high learned resourcefulness. In essence,

stress had a negative effect on academic success in students with low resourcefulness, but had no effect on those individuals with high learned resourcefulness.

Mindfulness

Mindfulness is commonly defined by purposely paying attention to present moment experiences, devoid of judgment, creating within the individual a sense of stability and nonreactive awareness (Grossman, Niemann, Schmidt, & Walach, 2004, Miller, Fletcher, & Kabat-Zinn, 1995). Mindfulness has been gaining greater recognition for its usefulness in therapeutic settings for reducing stress and anxiety. However, its origins date back more than 2,500 years ago as a meditation technique practiced by monastic Buddhist orders and laity. Mindfulness-Based Meditation (MBM) was recognized as an effective technique to quiet the mind by focusing one's attention on the breath, along with other physical and psychological states (Gampopa, 2000). Through this present moment practice, the individual becomes less reactive to potentially difficult circumstances, maintaining affective balance, understood as equanimity. Mindfulness meditation is still recognized in Buddhist traditions as a basis for developing balance in one's life (Wallace & Shapiro, 2006).

As mentioned above, mindfulness exercises and techniques are being used in therapeutic setting to help individuals develop emotion regulation and self-regulatory behavior, which according to Baumeister, Heatherton, and Trice (1994), is a key component to overall well-being. Aspects of mindfulness meditation can be found in a variety of psychotherapeutic practices such as: Mindfulness-Based Cognitive Therapy (MBCT), Mindfulness-Based Stress Reduction (MBSR), Dialectical Behavior Therapy (DBT) and Acceptance and Commitment Therapy (ACT) (Bach & Hayes, 2002).

Mindfulness-Based Meditation has been practiced in eastern cultures for centuries with its foundation in Theravada Buddhism and has been westernized by Jon Kabat-Zinn at the University of Massachusetts Medical Center. Kabat-Zinn's Mindfulness-Based Stress Reduction is a structured therapy that combines MBM with Hatha yoga. Mindfulness-Based Meditation is a process in which one trains the mind to function in a nonjudgmental minute-by-minute mode (Gazella, 2005). While people are bombarded by thoughts and emotions on a daily basis, MBM teaches the individual to observe and recognize those thoughts but then allow them to pass by without judging them or becoming immersed in them. Grossman and colleagues (2004) offered this analogy. Imagine lying down on the ground looking up at the sky on a clear day. Birds and clouds pass by your field of vision, but they do not stay. Now, imagine your negative thoughts are like the clouds and the birds. They are allowed to enter our mind, but MBM reorients the individual to broaden one's self awareness and focus on the present, allowing the negative thoughts to pass by like the clouds or birds in the sky. A practical example of using MBM is when an individual begins to ruminate on a particular argument or unpleasant experience. Imagine a man taking his dog for a walk. Picture this person getting increasingly angry over an argument he had earlier that day. He could let the argument fester inside and let his anger grow, or he could acknowledge that he was thinking about the argument, recognize his feelings, let the feelings pass, and focus his attention on his breathing and walking with his pet. If he chooses the latter experience, eventually he will become immersed in the task and not think about anything else but his breathing and walking his dog, being present to the entire experience. This is

what is called “living in the moment” as the individual experiences a sense of calm (Praisman, 2008, p. 213).

Hatha yoga is combined with MBM to form the second part of Mindfulness-Based Stress Reduction. Hatha yoga uses a variety of positions in order to focus the mind on that particular posture. If the mind is focused on the posture, it cannot be distracted by other thoughts or emotions. Individuals of various fitness levels and disabilities are able to perform the positions due to their gentle forms (Hamilton, Kitzman, & Guyoue, 2006).

Formalized training for MBSR consists of an 8-week course where the participants meet once a week for 2 ½ hours followed by a one-day retreat for 8 hours. During this time students are taught how to perform a body scan and sitting meditation. In a body scan, the participants are taught to focus on their breathing and then progressively and methodically tune their awareness to each body part, becoming attentive to the sensations, followed by intentionally relaxing each part of the body from one’s toes to the top of one’s head. Sitting meditation is also taught to the participants who are instructed to focus solely on the present, allowing nothing else to enter their thoughts other than simply existing. This meditation is similar to and has its foundations in Zen Buddhism. In addition, throughout the 8-week training program students are given daily homework assignments which include, yoga, exercises to increase their power of observation, and meditation. Participants are encouraged to practice MBSR for 45 minutes each day and are given CDs or audiotapes as a guide for home meditation and journals to track their thoughts and feelings. These lessons are meant to help the

individual implement meditation into their daily lives, allowing routine activities to become meditative practices (Kabat-Zinn, 2005).

Similar MBM exercises and therapeutic techniques used in MBCT, ACT, and DBT have been shown to increase psychological functioning in a wide range of populations (Carmody & Bear 2007). Studies have shown the effectiveness of MBM to reduce stress, anxiety and rumination, while increasing awareness and overall wellbeing.

A study by Carmody and Baer (2007) was conducted with 174 adults with a wide range of presenting problems including personal and employment related stress, chronic pain, anxiety and illness related stress. Participants took part in the 8-week MBSR training program. As part of the study, participants recorded the number of minutes of mindfulness practices (both informal and formal) they had performed during the week.

Researchers used the following six measures for pre and post tests analysis. Mindfulness was assessed with the Five Facet Mindfulness Questionnaire which measures an individual's general tendency to be mindful in daily living (Bear, Smith, Hopkins, Krietemeyer, & Toney, 2006). The Brief Symptom Inventory (Derogatis, 1992) was given to assess psychological symptoms and somatic complaints. The Medical Symptom Checklist created by Kabat-Zinn (1982) was used to measure common medical symptoms individuals experienced within the past month. Perceived stress was assessed using the Perceived Stress Scale (Cohen, Kamark, & Mermelstern, 1983). This measure asks participants to report the degree to which situations over the past month have been unpredictable, overwhelming, and uncontrollable. And finally, the Scales of Psychological Well-Being (Ryff & Keyes, 1995) was used to assess psychological well-being. This measure is broken down into six factors: self-acceptance, positive

relationships with others, autonomy, environmental mastery, purpose in life, and personal growth.

Paired sample *t*-tests showed significant changes in each of the six measures. Pre-test/post-test analysis showed significant increases on all mindfulness facets. Large effect sizes were noticed for observing and non-reactivity to inner experience, with moderate effect sizes for non-judgment, describing, and acting with awareness. Psychological well-being subscales also increased with the amount of mindfulness practice. Finally, significant decreases in psychological and medical symptoms, along with perceived stress levels, were all observed after implementation on the MBSR treatment program.

Ramel, Goldi, Carmona, and McQuaid (2004) conducted a study with 38 subjects who presented with a diagnosis of mood disorder. Pre and post testing using the Beck Depression Inventory (BDI) and the Spielberger State-Trait Anxiety Inventory (STAI) showed a decrease in depressive and anxiety symptoms after taking part in an MBM treatment. Additionally, the Dysfunctional Attitudes Scale (DAS) which measures perfectionism and approval, and the Response Style Questionnaire (RSQ) which measures reflection, brooding and rumination were used. Results confirmed significant reductions in DAS, STAI and BDI scores. This study highlights the effectiveness and usefulness of using MBSR with individuals suffering from mood disorders.

Research has also been conducted to measure the effectiveness of MBM with school age children and their parents. A study by Greco and Hayes (2008) revealed that both parents and children who used MBSR showed significant improvement in attention, identifying and expressing emotion, and meta-cognitive processes. Participants reported significantly less negative emotion in response to social and physical threat scenarios.

Additionally, the study found an increase in self-compassion and self-judgment with individuals who took part in MBSR programs.

Another study by Napoli, Krech and Holley (2005) worked with 254 first, second and third grade students over a 24-week period in which students were trained in mindfulness meditation. Students participated in mindfulness activities on a bi-monthly basis along with their teachers. The mindfulness curriculum focused on sensorimotor awareness, breathwork, movement, and body scan activities. Findings indicated a decrease in test anxiety scores along with an increase in selective attention scores. Results from the ACTeRS (ADD-H Comprehensive Teacher Rating Scale) which is designed to assess classroom behavior, indicated fewer problems noted by teachers compared to a control group. Additionally, performance improvements were recognized in teachers' ratings of students with attention deficit hyperactivity disorder behaviors along with the students' increased ability to choose what to pay attention to.

A study on stress management with the use of MBSR was conducted on medical students over a four-year period (Rosenweig, Reibel, Greeson, Brainard, & Hojat, 2003). The purpose of the study was to examine the influence of MBSR on 2nd-year medical students, measuring its impact on psychological well-being as compared to a control group. Jefferson Medical College students were eligible to take part in a MBSR program, offered as one of ten elective seminars. Students who participated in the MBSR program met for ten weekly sessions, approximately 90 minutes each. During the course, students were exposed to a variety of mindfulness meditation practices including body scan, mindful stretching (Hatha Yoga), breath awareness, eating and walking meditation, and guided imagery. The students were also given audio tapes for home practice and were

expected to practice formal mindfulness activities 20 minutes a day, six days a week. Students in the control group participated in elective seminars focused on complementary and alternative medicine. One-hundred forty students received MBSR training with 162 other students serving as the control group. The Profile on Mood States (POMS) was administered at the beginning and end of the seminar to both participants and control group. The POMS measures six identifiable mood states: tension-anxiety, depression-dejection, anger-hostility, vigor-activity, fatigue-inertia, and confusion-bewilderment. Additionally, a total mood disorder (TMD) score can be derived from the POMS as a single global score of affective state. Analysis of the data showed a pronounced inverse relationship between MBSR and control groups at the end of the study. The seminar ended as all students prepared for final semester examinations. The control group data indicated marked increase in TMD scores, signifying increased stress and anxiety. Conversely, participants in the MBSR seminar not only demonstrated improvement over baseline scores but reported significantly lower TMD scores as compared to the control group. Researchers concluded that MBSR may be effective for reducing stress and anxiety for medical students.

Rationale and Hypotheses

Considering the data studies have provided on the potential benefits of increased mindfulness, further promotion and research of MBM seemed warranted. Increased mindfulness has been found to decrease anxiety and stress, while at the same time increasing overall well-being. Increases in awareness, directive attention, mood, and affective states have all been observed in individuals who have participated in mindfulness education and training.

The proposed study examined the predictive quality of high school GPA, ACT scores, academic stress, academic self-efficacy, and mindfulness on college GPA's. Researchers involved in mindfulness scale development have found that individuals with naturally higher levels of mindfulness (irrespective of formalized meditation training) report feeling less anxious, stressed, and depressed. These individuals state being more grateful, hopeful, content, joyful, vital, and satisfied with life than those who are less prone to mindful traits (Baer, et al., 2006; Brown & Ryan, 2003; Cardaciotto, Herbert, Forman, Moitra, & Farrow, 2008; Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007; Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006). This study examined this predisposition to mindfulness and its effect on academic performance in college students.

The hypotheses tested in this study were hierarchical in nature. The first hypothesis tested was that high school GPAs and ACT scores would be predictive of university semester GPAs.

The second hypothesis tested was that adding academic stress to the model would show a significant increase in predicting semester GPA.

The third hypothesis tested was that adding academic self-efficacy to the model would show a significant increase in predicting semester GPA.

The fourth and final hypothesis tested was that adding mindfulness to the model would show a significant increase in predicting semester GPA.

Methods

Participants & Procedures

Subjects for this study were recruited from two introductory psychology courses at Eastern Illinois University during the fall semester of 2010. Individuals who volunteered for the study were given participation points with an optional participation activity to ensure that volunteers were under no pressure to take part in the study. The researcher obtained IRB approval from the author's university prior to conducting the assessments.

Data from 268 undergraduate students was collected from two sections of introductory psychology. Of those surveyed, 207 (77.2%) were female. Ages ranged from 18 to 31, with a mean of 18.78 (SD = 1.22). Class rankings were as follows: 67% freshmen, 23% sophomores, 7.8 % juniors, and 1.5% seniors. Ethnicity distributions of the sample were: 76.1% Caucasian, 16% African-American, 2.6% Hispanic, 0.4% Native American, 1.1% Asian, 2.6% multiracial and 0.7% other.

Participants received a packet containing four questionnaires that assessed students' academic stress, academic self-efficacy, mindfulness, and general demographic information. In addition to the four surveys, a form requesting permission for the researcher(s) to access the subjects' fall semester GPA, high school GPA, and ACT scores was also included in the packet. This request was a standardized form provided by the Eastern Illinois University's IRB department.

Measures

Mindfulness was measured using the Mindfulness Attention Awareness Scale (MAAS; Brown & Ryan, 2003). The MAAS is a 15-item assessment measuring

subjects' general tendency to be aware and attentive to present-moment events in daily life. The MAAS uses a 6-point Likert scale with responses varying from *almost always* to *almost never*. Respondents are asked to rate how often they have experiences of being preoccupied, difficulty staying focused, or not paying attention to present moment activities. Examples of these statements are, "I do jobs or tasks automatically, without being aware of what I'm doing," and "I rush through activities without being really attentive to them." The measure is scored by calculating the mean across the 15 items, with higher scores indicating greater mindfulness. MacKillop and Anderson (2007) found the MAAS to have a single-factor structure, indicating a unidimensional measurement of mindfulness. The MAAS has been found to have good internal consistency ($\alpha=.82$) and has demonstrated good discriminate and convergent validity. The MAAS was "significantly and positively correlated with openness to experience, emotional intelligence, and well-being; negatively correlated with rumination and social anxiety; and unrelated to self-monitoring." (Bear, Smith, Hopkins, Krietemeyer, & Toney, 2006, p. 28). Significant increases in MAAS scores have also been found in practitioners of mindfulness as compared to matched community controls (Brown & Ryan, 2003).

Academic self-efficacy was surveyed using the Beliefs in Educational Success Test (BEST; Majer, 2006). This survey, using 10 hypothetical situations, is designed to assess students' confidence in their abilities to engage in behaviors related to higher education. The BEST is based on Bandura's (1997) cognitive-behavioral self-efficacy theory. High scores indicate goal-oriented behaviors and a stronger sense of self-confidence. The BEST questionnaire reflects a range of tasks commonly associated with

higher education, but does not specify any particular field of study or academic subject area. Examples of these questions are “How confident are you in your ability to learn new information?” and “How confident are you that you will complete all the required coursework for your degree/program?” Responses to these questions range from 0 (Not at all confident) to 100 (Very Confident). Responses are averaged for a mean score. Higher scores indicate more academic self-confidence, while lower scores designate less. Internal consistency for the BEST was measured in three pilot samples ($n_s = 20, 74,$ and 97) with Cronbach’s alphas ranging from .83 to .91. Internal validity was also strong (Cronbach’s alpha = .92). Concurrent validity was assessed using the General Self-Efficacy Scale (GSE; Schwarzer, 1993; Schwarzer & Jerusalem, 1995) which measures one’s global confidence in coping abilities when faced with a variety of demanding and novel situations. The GSE has good internal consistency (Cronbach’s alphas ranging from .76 to .90) and internal reliability (.80). Correlational analysis revealed a significant positive relationship between the GSE and BEST scores, $r(53) = .52, p < .001$. Findings indicate a moderate degree of criterion-related validity with respect to the construct of self-efficacy.

Academic stress was measured using the Undergraduate Stress Questionnaire (USQ; Crandall, Preisler, & Aussprung, 1992). The USQ is an 83 item checklist in which subjects are asked if particular stress-invoking life events have happened to them within the last two weeks. The check marks are tallied for a total score. Examples on the life events are “had a lot of tests,” “victim of a crime,” “working while in school,” and “death of a family member or friend.” The uniqueness of this measure is the number of items related to the daily stressors of undergraduate university life. Twenty-one items

(25%) are considered directly related to college, fifty-one (61%) of the items are not related, and 11 (13%) can be considered in between. Initial validation of the USQ found good internal consistency ($KR-21=.80$) and split-half reliability (.71). The USQ has also been found to correlate positively with physical symptoms and negatively with mood, both of which are frequently associated with increased stress (Crandall et al., 1992).

Results

Pearson and partial correlations were calculated between all study variables. Significant positive correlations were found between: high school GPA and semester GPA; self-efficacy and semester GPA, ACT and semester GPA, ACT and high school GPA, self-efficacy and stress, and mindfulness and stress (see Table 1). Hierarchical linear regression was used to test the four hypotheses that students' ACT and high school GPAs, along with current stress, self-efficacy, and mindfulness scores would significantly predict undergraduate semester grade point averages. Fall 2010 semester GPAs were entered as the dependent variable with high school GPAs and ACT scores entered as independent variables in the first block. Total scores from the Undergraduate Stress Questionnaire (USQ) were entered as the independent variable in the second block. The third block contained the mean scores from the Beliefs in Educational Success Test (BEST) measuring self-efficacy. Finally, the fourth block added mindfulness as the independent variable with mean scores taken from the Mindfulness Attention Awareness Scale (MASS).

Data analysis showed predictive value for the full model $F(5, 257) = 18.85, p < .001$ and accounted for 27.2% of the variance in semester GPA. In the first block, high school GPA and ACT scores accounted for 24.2% of the variance. Stress did not add a

significant contribution to overall predictability in the second block, but self-efficacy contributed an additional 3.0%. The addition of mindfulness in the last block also did not significantly contribute to overall predictability. Of all the variables, only high school GPA and self-efficacy were significant positive predictors of semester GPA (see Table 2). The first hypothesis that high school GPA and ACT scores were predictive of semester GPA was supported. However, the second, third, and fourth hypotheses were not supported by the present data.

Discussion

Interpretation of Results

This study attempted to evaluate the predictive qualities of high school GPA, ACT scores, academic stress, academic self-efficacy, and mindfulness on overall academic performance. As a whole, this regression model was found to be a significant predictor of academic success. However, not all stages (blocks) of the model supported the proposed hypotheses.

The first hypothesis stated that participants who had higher high school GPA's and ACT scores would, in turn, have higher university semester GPAs. This hypothesis was supported via the regression model. However, upon further analysis, only high school GPA demonstrated predictive value toward academic success. Higher ACT scores in this research pool were not predictive of semester academic success. As addressed in previous studies (Breland, 1998; Payne, Rapley, & Wells, 1973), this finding does call into question the validity of standardized tests as a means of estimating a student's academic potential. As these researchers propose, there remains a significant unexplained variance in student academic performance.

The second hypothesis, that higher levels of academic stress would be predictive of lower semester GPAs, was not supported. Academic stress did not have a significant effect on semester GPAs, unlike previous research conducted by Felsten and Wilcox (1992), who found a significant negative correlation between stress and academic success. While stress may affect a student's overall wellbeing, the research did not support the notion of stress as a negative factor upon academic performance.

The third hypothesis proposed that higher levels of academic self-efficacy would be predictive of greater academic success. Consistent with the studies conducted by Lent and Brown (1984) and Chemers, Hu, and Garcia (2001), academic self-efficacy was found to be a predictive variable of academic performance. Students with greater confidence in their intellectual abilities were found to have higher GPAs compared to those with lower expectations. In essence, students who possessed higher academic self-efficacy (a strong belief in their abilities as a student) produced higher undergraduate semester GPAs.

Finally, the variable of trait mindfulness was not found to be a significant predictor of academic success. The hypothesis that individuals with higher levels of mindfulness would have higher semester GPAs was not supported. Furthermore, there was no correlation found between mindfulness and semester GPAs after controlling for previous variables. Various studies have demonstrated the usefulness of Mindfulness Based Meditation and Mindfulness-Based Stress Reduction in significantly decreasing stress, anxiety, and negative emotion while increasing attention, emotion recognition and expression and meta-cognitive functioning (Greco & Hayes 2008; Rosenweig, Reibel, Greeson, Brainard, & Hojat, 2003). Though these studies did not predict increases in

academic performance as part of their study, they did demonstrate the profound benefits of MBM for overall wellbeing. Uniquely different from previous research, this study examined the influence of trait mindfulness on undergraduate semester GPAs. Other studies mentioned in this work introduced aspects of MBM and MBSR via training sessions and at home work aimed to increase levels of mindfulness. Though trait mindfulness may not seem to have a significant impact on academic performance, it does not negate the possible impact of structured mindfulness training for students' overall wellbeing and/or academic success.

As mentioned above, positive correlations were found between: high school GPA and semester GPA, ACT and semester GPA, self-efficacy and semester GPA, ACT and high school GPA, self-efficacy and stress, and mindfulness and stress.

As expected, universities rely on the relationship of ACT scores and high school GPAs to predict the academic potential of their incoming freshmen. The correlation of these variables gives some credence to the continued use of these measures as a guideline for setting academic standards for college admission. Some colleges are now looking toward non-traditional assessment to predict academic success. The correlation between semester GPA and academic self-efficacy may be one area in which universities may consider assessing for future admission considerations. Or, once admitted, schools may find the need to focus on increasing the academic self-efficacy of their student body as a way of promoting academic performance.

The significant positive correlation between ACT scores and high school GPA has been observed in numerous studies. However, of note, ACT scores lacked predictive value for semester GPA in this study. This could be due to an increased focus on

“teaching to the test” in the school systems rather than an overall development of study skills and habits necessary for academic excellence.

The last two positive correlations between academic self-efficacy and stress, and mindfulness and stress may be due to healthy levels of stress known as eustress. This particular type of stress increases awareness and primes the body for increased performance. Moderate levels of stress are good for the individual to maintain peak performance, whether physical or mental. This increase in healthy stress levels may amplify trait mindfulness causing greater awareness and meta-cognitive functioning. However, too much stress can be detrimental to the individual thereby decreasing performance and increasing distractive states. Finally, the correlation between self-efficacy and stress could have a similar explanation to that of mindfulness and stress. With increased stress one’s determination or need to be successful may be affected. In essence, with increased stress levels comes a fight or flight mode where some students may experience greater performance due to increased stress, thus feeling more self-confident in their own abilities. This healthy stress may bring about a sense of desired performance within the classroom setting whereby the individual becomes more cognizant of their academic capabilities. Much like the correlation between stress and mindfulness, increases in healthy stress may cause the student to develop greater self-efficacy and/or increased effectiveness within an academic setting.

Limitations

While the data from this study produced significant findings, a few limitations should be considered. First, the majority of the data collected were gathered through self-reporting measures. Mindfulness, academic self-efficacy, and academic stress were all

self-reported. High school GPA and ACT scores were collected from university data bases. Discrepancies in self-reporting may have been influenced by the students' desire to complete the surveys in a timely manner or may have been influenced by the large group setting. The students may have been concerned with a lack of autonomy in the group setting, especially when answering personal questions associated with the stress and self-efficacy measures. Stress and self-efficacy data may also have been skewed due to the timing of the data collection. The data for this research was collected near the end of the semester, just prior to finals week. Students may have had higher stress levels at this time. Additionally, their self-efficacy reports may have been affected by their own knowledge of current academic progress (grades) throughout the semester.

A second limitation could be found in using the students' semester rather than cumulative GPAs. Incoming freshmen do not possess a cumulative GPA until the end of their second semester in college. Some differences may be observed in cumulative GPAs verses only semester GPAs. Furthermore, the majority of the sample population (67%) was incoming freshmen taking their first college courses. Adjusting to college life and independent living may be a contributing factor to the self-reporting measures. When combined with the sophomores, nearly 90% of the subject pool consisted of underclassman rankings. Additionally, 77% of the subject pool was female.

A third limitation may be found in assessing overall mindfulness. Previous studies researched the effects of mindfulness in the academic setting whereby the students were trained in MBM practices. After instruction and performance these activities, these students observed significant increases in mindfulness which increased awareness and meta-cognitive functioning and decreased stress. This current study looked

at trait mindfulness without structured training in MBM. While trait mindfulness does not seem to be a contributing factor in undergraduate semester GPAs, it does not negate the possible benefits of structured MBM training for college students. Increasing mindfulness within the university student population, via a structured program, may produce significant results in overall GPA. Further studies in this area may be warranted due to previous research showing the benefits of MBM in both physical and mental wellbeing.

Conclusion

Results of the current study confirmed overall predictive quality for the regression model. As a whole, high school GPA, ACT scores, academic stress, academic self-efficacy, and mindfulness were predictive of undergraduate semester GPA. However, only high school GPA and academic self-efficacy demonstrated predictive qualities when observed separately from other variables. Additional, significant correlations were observed between high school GPA and semester GPA, ACT and semester GPA, self-efficacy and semester GPA, ACT and high school GPA, self-efficacy and stress, and mindfulness and stress. As previous studies have acknowledged, the criteria for assessing the potential academic success in college applicants can be observed in the standardized data of high school GPAs and ACT scores. In this study, the additional factor of academic self-efficacy showed to be useful in predicting academic success.

Though the main focus of this study, that trait mindfulness would be predictive of academic success was not supported, additional research in this area seems reasonable. Previous studies have demonstrated the benefits of mindfulness in both the medical and mental health arenas. Though the current study did not find correlations between trait

mindfulness and academic success, there remains empirical evidence of its overall benefit to individual wellbeing. In order for mindfulness to have a significant impact on academic success, individuals may need to be trained in MBM practices. Future studies focusing on mindfulness training and implementation within a university setting may yield significant improvements in overall academic success and wellbeing.

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Table 1.
 Pearson and partial correlations between all study variables

	Sem. GPA	H.S. GPA	ACT	Stress	Self Efficacy	Mindfulness	Partial
Semester GPA	---						
High School GPA	.485**						.470**
ACT	.156**	.153**					.098
Stress	-.065	-.097	.049				-.051
Self Efficacy	.179**	.019	.008	.124*			.198**
Mindfulness	-.065	-.096	.018	.314**	-.056	---	.002

(N=268)

* $p < .05$

** $p < .01$

Table 2
Multiple regression results in predicting undergraduate semester GPA

Model	ΔR^2	Total R^2	β	t	p -value
1 High School GPA ACT	.242*	.242*	.464 .085	8.456 1.566	.000 .119
2 Stress	.001	.242	-.047	-.812	.417
3 Self Efficacy	.030*	.272*	.175	3.214	.001
4 Mindfulness	.000	.272	.002	.037	.970

* $p < .01$.

Appendix A

CONSENT TO PARTICIPATE IN RESEARCH

Predictors of Academic Success in College Students

You are invited to participate in a research study conducted by Brian Brausch and Dr. Steven Conn, from the Counseling and Student Development department at Eastern Illinois University.

Your participation in this study is entirely voluntary. Please ask questions about anything you do not understand, before deciding whether or not to participate.

• PURPOSE OF THE STUDY

The purpose of this study is to examine factors that influence and predict academic performance in college students.

• PROCEDURES

If you volunteer to participate in this study, you will be asked to complete a packet of surveys about your actions, thoughts, and behaviors. These surveys will take between 10 to 15 minutes to complete. After the surveys are completed, you will be debriefed as to the purpose of the study being conducted.

• POTENTIAL RISKS AND DISCOMFORTS

This survey involves not greater risk than those ordinarily encountered in everyday life. If you become upset while participating in the research, you may skip any question you wish or withdraw from participation entirely without penalty. Researchers will be available during and after the study to speak with you if you have any questions or concerns about the research or if any particular question causes emotional discomfort.

• POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Your participation in the study will help others by providing information concerning factors to academic success.

• INCENTIVES FOR PARTICIPATION (*Optional*)

Individuals who participate in this study will be eligible to win one of two \$25 gift cards. Individuals who withdraw from the study will still be eligible for the drawing without penalty.

• CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained through the following measures. Each survey packet will be assigned an identification number, which will correspond with the informed consent form. Participants can be identified only by matching up their signed informed consent form with their completed packet. Informed consent forms are stored separately from completed packets. Both are stored in a locked filing cabinet in the principal investigator's faculty advisor's office, which is also locked when not occupied. Only the principal investigator and the faculty sponsor will have access to both the informed consent forms and completed packets. Data from participants who withdraw from the study will be shredded. Data will be kept in a locked filing cabinet in a locked

office for 5 years after the study has been completed. After five years they will be shredded.

● **PARTICIPATION AND WITHDRAWAL**

Participation in this research study is voluntary and not a requirement or a condition for being the recipient of benefits or services from Eastern Illinois University or any other organization sponsoring the research project. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind or loss of benefits or services to which you are otherwise entitled. There is no penalty if you withdraw from the study and you will not lose any benefits to which you are otherwise entitled.

● **IDENTIFICATION OF INVESTIGATORS**

If you have any questions or concerns about this research, please contact:

Brian Brausch
Principal Investigator
bdbrausch@eiu.edu
217-508-7721

Dr. Steven Conn
Faculty Sponsor
srconn@eiu.edu
217-581-7242

● **RIGHTS OF RESEARCH SUBJECTS**

If you have any questions or concerns about the treatment of human participants in this study, you may call or write:

Institutional Review Board
Eastern Illinois University
600 Lincoln Ave.
Charleston, IL 61920
Telephone: (217) 581-8576
E-mail: eiuirb@www.eiu.edu

You will be given the opportunity to discuss any questions about your rights as a research subject with a member of the IRB. The IRB is an independent committee composed of members of the University community, as well as lay members of the community not connected with EIU. The IRB has reviewed and approved this study.

I voluntarily agree to participate in this study. I understand that I am free to withdraw my consent and discontinue my participation at any time. I have been given a copy of this form.

Printed Name of Participant

Signature of Participant

Date

Appendix B

Eastern Illinois University
AUTHORIZATION TO EXCHANGE OR REQUEST INFORMATION

Student information is confidential under the Family Educational Rights and Privacy Act (FERPA), 20 U.S.C. 1232g. Therefore, your authorization is necessary to permit the release of information concerning your academic records to third parties.

The Authorization to Exchange/Request Information is for the purpose stated below:

I, _____ hereby authorize Mr. Brian Brausch in the Department of Counseling and Student Development at Eastern Illinois University to access my academic records and information including, but not limited to:

high school GPA, ACT scores, and fall 2010 semester GPA for research purposes pursuant to a research project in which I am a participant.

I understand that I have a right to be told what information was exchanged.

I understand that only Mr. Brausch will have access to my records, and that my academic data will be kept confidential.

I understand this authorization will be valid until May 31, 2011.

I affirm that I am eighteen (18) years of age or older.

Signature of Student

Date

Print name

Appendix C

Demographic Questions

Gender: ___female ___male

Age: ___

Year in college: ___ Freshman ___ Sophomore ___ Junior ___ Senior

Ethnicity: ___ Caucasian ___ Middle Eastern ___ Multiracial
 ___ African American ___ Native American ___ Other
 ___ Hispanic ___ Asian

Beliefs in Educational Success Test©

(Majer, 2006)

The following questions will ask you to rate your belief in your ability to succeed in your education. Respond to each question using a 1 – 100 scale:

1-----10-----20-----30-----40-----50-----60-----70-----80-----90-----100
Not at all Confident Most Confident

How confident are you...

- ___ 1. ...that you will do well in future courses?
- ___ 2. ...in your ability to learn new information?
- ___ 3. ...in completing your homework assignments?
- ___ 4. ...in understanding reading assignments?
- ___ 5. ...in your ability to study notes?
- ___ 6. ...that you will pass your course(s)?
- ___ 7. ...that you will complete all required coursework for your degree/program?
- ___ 8. ...in your ability to work with others on class projects?
- ___ 9. ...to seek your professors' help during office hours?
- ___ 10. ...that you are in control of your education?

Appendix D

Mindfulness Attention Awareness Scale

Please circle the number indicating how frequently you experience each statement below.

	Almost Always	1	2	3	4	5	6	Almost Never	
1. I could be experiencing some emotion and not be conscious of it until some time later.				1	2	3	4	5	6
2. I break or spill things because of carelessness, not paying attention, or thinking of something else.				1	2	3	4	5	6
3. I find it difficult to stay focused on what's happening in the present.				1	2	3	4	5	6
4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.				1	2	3	4	5	6
5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.				1	2	3	4	5	6
6. I forget a person's name almost as soon as I've been told it for the first time.				1	2	3	4	5	6
7. It seems I am "running on automatic" without much awareness of what I'm doing.				1	2	3	4	5	6
8. I rush through activities without being really attentive to them.				1	2	3	4	5	6
9. I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there.				1	2	3	4	5	6
10. I do jobs or tasks automatically, without being aware of what I'm doing.				1	2	3	4	5	6
11. I find myself listening to someone with one ear, doing something else at the same time.				1	2	3	4	5	6
12. I drive places on "automatic pilot" and then wonder why I went there.				1	2	3	4	5	6
13. I find myself preoccupied with the future or the past.				1	2	3	4	5	6
14. I find myself doing things without paying attention.				1	2	3	4	5	6
15. I snack without being aware that I'm eating.				1	2	3	4	5	6

Appendix E

Undergraduate Stress Questionnaire

Please place a checkmark next to any of the life events that happened to you within the last two weeks.

- | | |
|--|--|
| 1. <input type="checkbox"/> Death (family member or friend) | 44. <input type="checkbox"/> Feel unorganized |
| 2. <input type="checkbox"/> Had a lot of tests | 45. <input type="checkbox"/> Trying to decide on a major |
| 3. <input type="checkbox"/> It's finals week | 46. <input type="checkbox"/> Feel isolated |
| 4. <input type="checkbox"/> Applying to graduate school | 47. <input type="checkbox"/> Parents controlling with money |
| 5. <input type="checkbox"/> Victim of a crime | 48. <input type="checkbox"/> Couldn't find a parking space |
| 6. <input type="checkbox"/> Assignments in all classes due the same day | 49. <input type="checkbox"/> Noise disturbed you while trying to study |
| 7. <input type="checkbox"/> Breaking up with boy-/girlfriend | 50. <input type="checkbox"/> Someone borrowed something without permission |
| 8. <input type="checkbox"/> Found out boy-/girlfriend cheated on you | 51. <input type="checkbox"/> Had to ask for money |
| 9. <input type="checkbox"/> Lots of deadlines to meet | 52. <input type="checkbox"/> Ran out of ink while printing |
| 10. <input type="checkbox"/> Property stolen | 53. <input type="checkbox"/> Erratic schedule |
| 11. <input type="checkbox"/> You have a hard upcoming week | 54. <input type="checkbox"/> Can't understand your professor |
| 12. <input type="checkbox"/> Went into a test unprepared | 55. <input type="checkbox"/> Trying to get into your major or college |
| 13. <input type="checkbox"/> Lost something (especially wallet) | 56. <input type="checkbox"/> Registration for classes |
| 14. <input type="checkbox"/> Death of a pet | 57. <input type="checkbox"/> Stayed up late writing a paper |
| 15. <input type="checkbox"/> Did worse than expected on test | 58. <input type="checkbox"/> Someone you expected to call did not |
| 16. <input type="checkbox"/> Had an interview | 59. <input type="checkbox"/> Someone broke a promise |
| 17. <input type="checkbox"/> Had projects, research papers due | 60. <input type="checkbox"/> Can't concentrate |
| 18. <input type="checkbox"/> Did badly on a test | 61. <input type="checkbox"/> Someone did a "pet peeve" of yours |
| 19. <input type="checkbox"/> Parents getting divorce | 62. <input type="checkbox"/> Living with boy-/girlfriend |
| 20. <input type="checkbox"/> Dependent on other people | 63. <input type="checkbox"/> Felt need for transportation |
| 21. <input type="checkbox"/> Having roommate conflicts | 64. <input type="checkbox"/> Bad haircut today |
| 22. <input type="checkbox"/> Car/bike broke down, flat tire, etc. | 65. <input type="checkbox"/> Job requirements changed |
| 23. <input type="checkbox"/> Got a traffic ticket | 66. <input type="checkbox"/> No time to eat |
| 24. <input type="checkbox"/> Missed your period and waiting | 67. <input type="checkbox"/> Felt some peer pressure |
| 25. <input type="checkbox"/> Coping with addictions | 68. <input type="checkbox"/> You have a hangover |
| 26. <input type="checkbox"/> Thoughts about future | 69. <input type="checkbox"/> Problems with your computer |
| 27. <input type="checkbox"/> Lack of money | 70. <input type="checkbox"/> Problems getting home from bar when drunk |
| 28. <input type="checkbox"/> Dealt with incompetence at the Registrar's office | 71. <input type="checkbox"/> Used a fake ID |
| 29. <input type="checkbox"/> Thought about unfinished work | 72. <input type="checkbox"/> No sex in a while |
| 30. <input type="checkbox"/> No sleep | 73. <input type="checkbox"/> Someone cut ahead of you in line |
| 31. <input type="checkbox"/> Sick, injury | 74. <input type="checkbox"/> Checkbook didn't balance |
| 32. <input type="checkbox"/> Had a class presentation | 75. <input type="checkbox"/> Visit from a relative and entertained them |
| 33. <input type="checkbox"/> Applying for a job | 76. <input type="checkbox"/> Decision to have sex on your mind |
| 34. <input type="checkbox"/> Fought with boy-/girlfriend | 77. <input type="checkbox"/> Talked with a professor |
| 35. <input type="checkbox"/> Working while in school | 78. <input type="checkbox"/> Change of environment (new doctor, dentist, etc.) |
| 36. <input type="checkbox"/> Arguments, conflict of values with friends | 79. <input type="checkbox"/> Exposed to upsetting TV show, book, or movie |
| 37. <input type="checkbox"/> Bothered by having no social support of family | 80. <input type="checkbox"/> Got to class late |
| 38. <input type="checkbox"/> Performed poorly at a task | 81. <input type="checkbox"/> Holiday |
| 39. <input type="checkbox"/> Couldn't finish everything you needed to do | 82. <input type="checkbox"/> Sat through a boring class |
| 40. <input type="checkbox"/> Heard bad news | 83. <input type="checkbox"/> Favorite sporting team lost |
| 41. <input type="checkbox"/> Had confrontation with an authority figure | |
| 42. <input type="checkbox"/> Maintaining a long distance boy-/girlfriend | |
| 43. <input type="checkbox"/> Crammed for a test | |

Total number of checked items.

Appendix F

Debriefing Sheet

Thank you for participating in this study. The information you provided, when combined with information from other participants, will provide valuable information about the factors that influence academic success in college. Specifically, this study will be assessing the importance of mindfulness (paying attention to present moment experiences, devoid of judgment) and its influence on academic success.

Completing these questionnaires may have brought up some unpleasant thoughts, memories, or feelings for you. Talking with others or with a counselor may be a benefit to you as you cope with these emotions. The experimenters are available to discuss any concerns you may have, and if interested, can give you a referral to a counselor who can provide additional services.

There are many counselors in the area who are able to help you deal with stress, anxiety, and negative thoughts. Below is the contact information for the counseling center at Eastern Illinois University that offers individual and group counseling for students free of charge:

EIU Counseling Center
Human Services Building
8:00 a.m. – 4:30 p.m.
(217) 581-3413

Below are two agencies in the community that offer counseling to both students and community members, on a sliding fee scale:

LifeLinks (Mattoon)
(217) 238-5700

Sarah Bush Lincoln Health Center
(217) 258-2525

If you have any questions about this study or would like to speak with the experimenters about any topic addressed in the questionnaires, please contact Brian Brausch at (217) 581-6696 or Dr. Steven Conn at (217) 581-7242, Counseling and Student Development Department, Eastern Illinois University.

Thank you for your participation.