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A Model of Gratitude, Psychological Well-Being, and Academic Engagement in
College Students

by

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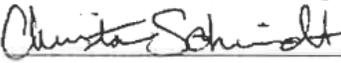
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Abstract

A Model of Gratitude, Psychological Well-Being, and Academic Engagement in College Students

Rebecca Rochowiak

The goal of the present study was to test a model of gratitude, psychological well-being, and academic engagement in college students. Based on the broaden and build theory of positive emotions, this study suggested that the positive emotion of gratitude would build psychological well-being in students and, in turn, predict academic engagement. A total of 330 college students completed a measure of gratitude (GRAT-R), sub-scales of a psychological well-being measure (RYFF), and sub-scales of a measure of academic engagement (PALS). Results of this study did not support the hypotheses that gratitude and psychological well-being together would predict students' reports of academic engagement. Limitations of this study and future directions are discussed.

Keywords: gratitude, psychological well-being, academic engagement, positive psychology

TABLE OF CONTENTS

LIST OF TABLES.....	v
LIST OF APPENDICIES.....	vi
INTRODUCTION.....	1
BROADEN AND BUILD THEORY OF POSITIVE EMTION.....	3
GRATITUDE BROADENS AND BUILDS.....	5
ACADEMIC ENGAGEMENT.....	7
GRATITUDE LEADS TO ACADEMIC ENGAGEMENT.....	8
PSYCHOLOGICAL WELL-BEING EFFECTS GRATITUDE AND ACADEMIC ENGAGEMENT.....	11
PURPOSE OF THE STUDY.....	12
METHOD.....	13
PARTICIPANTS.....	13
MEASURES.....	13
DEMOGRAPHIC INFORMATION.....	13
GRATITUDE.....	13
PSYCHOLOGICAL WELL-BEING.....	14
ACADEMIC ENGAGEMENT.....	15
PROCEDURE.....	15
DATA ANALYSIS.....	16
RESULTS.....	20
PRELIMINARY ANALYSES.....	20
CONFIRMATORY FACTOR ANALYSES.....	20
STRUCTURAL EQUATION MODELING.....	21
DISCUSSION.....	22
REVIEW OF FINDINGS.....	22
LIMITATIONS AND FUTURE DIRECTIONS.....	24
SUMMARY.....	26
REFERENCES.....	38
CURRICULUM VITA.....	46

LIST OF TABLES

Table 1: Means, standard deviations, correlations, and Cronbach's alpha coefficients of the research variables.....	28
Table 2: CFA fit indices for each study construct and overall measurement model.....	29

LIST OF APPENDICES

Appendix 1. The Gratitude, Resentment, and Appreciation Scale Revised.....30

Appendix 2. The RYFF Scales of Psychological Well-Being.....32

Appendix 3. The Patterns of Adaptive Learning Scale.....35

Appendix 4. Cover Letter for Exempt Research.....36

Appendix 5. Institutional Review Board Approval.....37

Chapter One:

Introduction

Philosophers and theologians have urged people to adopt an attitude of gratitude to live a more fulfilling life. With the foundation of gratitude stemming from a classical background, gratitude has become almost a normative aspect of morality, with ingratitude being seen as a significant negative quality. However, up until recently, gratitude has only gained minimal empirical attention. This is most likely due to psychology's overall tendency to neglect positive human functioning in favor for more research on dysfunction and maladaptive behavior. However, a recent area of psychology, positive psychology, aims to better understand this part of the human experience that has been largely ignored. More specifically, positive psychology focuses on identifying and enhancing human strengths and virtues, such as gratitude, that elicit positive human functioning and allow individuals to flourish. Including the positive aspect of psychology allows for a more complete understanding of the human experience.

Research rooted in the positive psychology movement has uncovered the role that positive emotions have in optimal functioning. This research is grounded in Barbara Fredrickson's (1998) Broaden-and-Build theory of positive emotions. Fredrickson asserts that positive emotions, such as joy, interest, and gratitude, function differently than negative emotions like fear and disgust. According to the broaden-and-build theory, positive emotions signal safety unlike negative emotions which signal danger and promote quick and decisive action. Positive emotions, on the other hand, broaden the way we respond to stimuli and build enduring personal resources (Fredrickson, 1998, 2001). Hobfoll (2002) defines personal resources as entities that are valued in their own right, or

are used to obtain a centrally valued end. Personal resources influence individuals' ability to successfully manage their environment, which is necessary for achieving goals and stimulating personal growth (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009).

Empirical research supporting Fredrickson's theory has demonstrated that experiencing positive emotion leads to significant cognitive changes such as broader attention, greater working memory, enhanced verbal fluency, and increased openness to information (Fredrickson & Branigan, 2005). Building personal resources, either behavioral or cognitive, is advantageous over the course of human development. Specifically, the current study suggests the importance that the positive emotion of gratitude has in broadening and building psychological well-being in college students.

Research has investigated the role of students' emotions in academic success. Notably, research has found that positive emotions enhance academic motivation (Bono & Froh, 2009; Pekrun, Goetz, & Titz, 2002) and serve as a precursor for success in college (Hixenbaugh, Dwart, & Towell, 2012; Ruthig, et al., 2008). Further, Froh, Sefick, and Emmons (2008) found that gratitude and aspects of well-being positively influenced adolescent student perceptions of the academic environment, school satisfaction, and academic engagement. While research has suggested that positive emotions positively influence various aspects of academic success, this research is still in its infancy. More research is needed to better understand the relationships among positive emotions and academic outcomes. Therefore, this study explores how positive emotions, specifically gratitude, broaden and builds psychological well-being, which, in turn, promotes academic engagement. Specifically, the current study demonstrates Fredrickson's broaden-and-build theory by suggesting that gratitude is related to various dimensions of

psychological well-being, such as environmental mastery, personal growth, and self-acceptance. These dimensions of psychological well-being will effect gratitude and academic engagement in college students.

Broaden-and-Build Theory of Positive Emotions

Current emotion models that aim to describe the role emotions play in behavior suppose that different emotions are associated with specific action tendencies (Frijda, 1986). Such models reason that emotions cause people's thought-action repertoires to narrow to distinct and specific behaviors that are evolutionarily adaptive (Tooby & Cosmides, 1990). For instance fear, which is associated with the urge to escape, or anger, associated with the urge to attack (Fredrickson, 2004). These emotions would signal danger and would be beneficial in escaping life or death situations.

While the narrowing behaviors and physiological changes associated with negative emotions has been empirically established (Levenson, 1994), research on changes associated with positive emotions suggest that positive emotions function differently from negative emotions. Barbra Fredrickson (1998) first suggested this disparity in negative emotions from positive emotions in her broaden-and-build theory of positive emotion. Unlike negative emotions that prompt specific actions, Fredrickson (1998, 2001) asserts that positive emotions broaden people's momentary thought-action repertoires, which build lasting personal resources.

Positive emotions, such as joy, pride, and contentment, do not typically occur in life-threatening situations like negative emotions. Positive emotions, rather, invoke feelings of safety where quick action is not necessarily needed. As such, responses to positive emotions do not limit or narrow behavior but rather, broaden and build

behavioral and cognitive resources (Fredrickson, 1998). This is also an evolutionarily adaptive response, as greater personal resources increases odds for survival and reproduction (Fredrickson, 2004). For example, the distinct positive emotion of interest broadens thought action repertoires by spurring the urge to explore and take in new information (Fredrickson, 2004). The act of exploring and taking in new information expands physical, intellectual, and psychological resources that could be used later to increase odds of survival. Over time, the greater frequency of positive emotion broadens cognitions and behavioral flexibility, which has been shown to increase mindfulness, resilience, social closeness, and aspects of physical health (Cohn, Fredrickson, Brown, Mikels, & Conway, 2009; Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Waugh & Fredrickson, 2006).

While the broaden-and-build theory has been established theoretically, it has also been empirically tested. Fredrickson and Branigan (2005) induced either positive or negative emotion using film clips and then tested participants with a global-local visual processing task and an open-ended “20 questions” task. Participants who were induced positive emotion displayed broadened attention in the visual processing task and answered the “20 questions” task more diversely than participants who were induced negative emotion. These results indicate the broadening ability positive emotions have in cognitive tasks.

Further studies in affective neuroscience have demonstrated that positive emotions have an undoing effect on the physiological effects of negative emotions (Fredrickson & Levenson, 1998; Fredrickson, Mancuso, Branigan, & Tugade, 2000; Tugade & Fredrickson, 2004). Participants in these studies were given an anxiety

inducing activity, such as giving a speech, and then were instructed to watch a film that produced either positive emotion, negative emotion, or was emotionally neutral. During the course of the study, participants' sympathetic nervous system arousal, specifically: heart rate, peripheral vasoconstriction, and blood pressure, were collected with a psychophysiological recording device. While the films, themselves, did not significantly impact sympathetic arousal, participants who were in the positive emotion condition displayed quicker cardiovascular recovery after the anxiety inducing activity than participants in the negative emotion condition and the emotionally neutral condition. Essentially, the emotion inducing films did not differ in what they *did* to the cardiovascular system; they differed in what they *undid*. So not only has experimental research on the broaden-and-build theory confirmed that positive emotions expand thought and action tendencies, but has also uncovered what Fredrickson (2002) calls an upward spiral toward well-being.

Gratitude Broadens and Builds

McCullough, Kilpatrick, Emmons, and Larson's (2001) view gratitude as a moral affect that can result from and stimulate moral behavior. In this way, gratitude works similarly to empathy, sympathy, and guilt in the moral domain. Empathy and sympathy are emotional reactions to the perceived needs of others (Eisenberg et al., 1994) that are most prominent in the moral domain for their ability to promote prosocial behavior (McCullough, Kilpatrick, Emmons, & Larson, 2001). Guilt, like empathy and sympathy, is also an emotional reaction but in response to some perceived failure, rather than need (Hoffman, 1990). This feeling of guilt can motivate people to treat others morally with prosocial behavior (Tangney, Miller, Flicker, & Barlow, 1996). Gratitude, on the other

hand, typically functions when people are the recipients of such prosocial behavior (McCullough et al., 2001). As a moral affect, gratitude has three predominant functions. Gratitude first serves as a moral barometer that signals to someone that they are the recipient of another's prosocial behavior. Secondly, gratitude functions as a moral motive that prompts voluntary behavior that benefits others. Gratitude then acts as a moral reinforcer that encourages future prosocial behavior.

As an emotion, gratitude can be thought to be “a sense of thankfulness and joy in response to receiving a gift, whether the gift be a tangible benefit from a specific other or a moment of peaceful bliss evoked by natural beauty” (Peterson & Seligman, 2004). This grateful emotion is an attribution-dependent state (Weiner, 1985) that results from two stages of cognitive processing. The first stage involves the recognition that one has obtained a positive outcome and the second stage involves the recognition that this positive outcome was due to an external source (Emmons & McCullough, 2003). A key aspect of gratitude is that the beneficiary of the positive outcome must feel that they were intentionally given the outcome without anything expected in return. In other words, in order to appropriately feel gratitude, one must recognize that another's prosocial behavior toward them was for no other purpose than to make them happy.

Gratitude has been linked to numerous positive physical, social, and emotional outcomes in adults. Generally, people who are more grateful are physically and mentally healthy (Krause, 2006). Gratitude is also related to positive emotional functioning, lower dysfunction, and positive social relationships (Wood, Joseph, & Maltby, 2009). Further, those high in gratitude are less angry, depressed, and emotionally vulnerable and they actually experience positive emotions more frequently (Wood, Maltby, Stewart, &

Joseph, 2008). Overall, those high in gratitude have a more positive and appreciative outlook toward life that involves an orientation to look for the positives (Wood et al., 2008). Taken together, experiencing gratitude leads to a better quality of life.

Fredrickson (2004) suggests that gratitude conforms to the broaden and build paradigm of positive emotion by facilitating prosocial behavior either toward the benefactor, toward others, or both. Over time, the prosocial behavior prompted by feelings of gratitude builds and strengthens social bonds and friendship (Emmons & Shelton, 2002). Further, the strengthened social resources elicited by gratitude cause one to habitually seek emotional and instrumental support, which, in turn, builds even greater social and cognitive resources (Wood, Joseph, & Linley, 2007). In addition, gratitude acts as a coping mechanism used to elicit the upward spiral of positive emotion by buffering against depressive symptoms and growing psychological resources (Fredrickson, Tugade, Waugh, & Larkin, 2003). Emmons and McCullough (2003) demonstrated this upward spiral sparked by gratitude with an experimental study that had participants write down what they were grateful for, things that were hassles or irritants, or a control of writing events that happened in a journal for 10 weeks. Those in the grateful condition were found to be higher in gratitude than the other two groups. More interestingly, those higher in gratitude reported fewer physical symptoms, and even reported spending more time exercising and getting more sleep than those in the other conditions. Largely, those higher in gratitude had greater levels of positive affect and had more optimistic appraisals of their life. Socially, participants in the gratitude condition were more likely to offer others emotional support and reported having helped someone with a problem recently. These findings are significant, as they attribute positive

outcomes to gratitude specifically, and lend greater support for the broaden and build theory of positive emotions.

Academic Engagement

Personal resources, that Fredrickson (1998) suggest stem from positive emotions, could substantiate to a number of outcomes. Resources could be internal, such as personal characteristics like dispositional gratitude, or resources could be external, such as marriage or job recognition (Hobfoll, 2002). Further, resources could also be commodities that may not hold any intrinsic value, but act as a means to acquire other resources (Hobfoll, 2002). As such, recent research has proposed engagement as a personal resource.

Research into engagement as a personal resource began with studying worker engagement (Schaufeli & Bakker, 2004), which is characterized by high levels of employee energy, work enthusiasm, and frequent experiences of flow during work (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). More recently, research has begun to investigate engagement in the educational domain (Feldman, Davidson, & Margalit, 2015; Schaufeli et al., 2002).

Academic engagement is a positive and affective-cognitive state of mind that is characterized by vigor, dedication, and absorption (Schaufeli, Martinez, Marques Pinto, Salanova, & Bakker, 2002). Ouweneel, Le Blanc, and Schaufeli (2014) conceptualize academic engagement to be similar to subjective well-being. Subjective well-being, or happiness, is a positive affective-cognitive state of mind that is characterized by overall life satisfaction, the presence of positive mood, and the absence of negative mood (Diener, Suh, Lucas, & Smith, 1999). While subjective well-being encompasses life in

general, Ouweneel, Le Blanc, and Schaufeli (2014) consider academic engagement as a domain-specific form of student subjective well-being. Previous research has found engagement to be directly related to superior future academic performance (Salanova, Schaufeli, Martinez, & Bresó, 2010) and also related to positive-affective states like hope and optimism (Ouweneel, Le Blanc, & Schaufeli, 2011).

Academic engagement could be considered an internal resource, as it refers to student competence to complete school work at the best of their ability. Academic engagement could also be considered as a means to gain something else, as engaged students tend to seek to expand their mastery and understanding in order to develop their competence.

Gratitude Leads to Academic Engagement

Emotions related to academics are immediate responses to the academic environment and influence engagement in students. Positive study-related emotions, such as hope, enjoyment, and pride, leads to greater academic engagement through goal-striving and open-mindedness (Pekrun, Goetz, Titz, & Perry, 2002). Negative study-related emotions, on the other hand, are related to lower student motivation (Pekrun, Goetz, Frenzel, Barchfeld, & Perry, 2011), which is counter to academic engagement. Pekrun et al. (2002) suggest gratitude as an academic-related emotion, however specific empirical research on the direct impact gratitude has on academic-related outcomes has yielded contrasting results.

In a study methodologically similar to Emmons and McCullough's (2003) research on gratitude in adults, Froh, Sefick, and Emmons (2008) tested a sample of early adolescents. They found that those in the gratitude condition had higher overall levels of

gratitude and well-being than the other two conditions. This gratitude induction was related to higher levels of optimism, lower levels of negative affect, and higher overall life satisfaction. Given these results, it appears that gratitude affects both adults and children in a similar fashion. Different from adults, however, is how gratitude was demonstrated to impact school satisfaction. Specifically, those in the gratitude condition reported higher domain-specific life satisfaction, such as positive perceptions of their classrooms, teachers, and peers, and they reported greater engagement with their academic pursuits. Children who were more grateful had a greater satisfaction with the school experience both at the immediate follow-up and at the three week follow up. This finding is quite significant considering how much school impacts younger populations.

While Froh, Sefick, and Emmons (2008) did find relationships between gratitude and various academic perceptions, these findings have not been systematically duplicated. The relationship gratitude has with academic outcomes is ambiguous; as gratitude has even been found to be unrelated to self-reported grade-point average (Froh & Yurkewicz, 2007). Ouweneel et al. (2014) performed a methodically similar study to Froh et al. (2008) but had different results. University student participants in this study were asked to perform a similar task as the participants in Froh et al. (2008) study and completed a gratitude activity each day for one week. Results of this research, however, did not reveal any significant effect of the gratitude activity on academic outcomes, specifically academic engagement. Given the ambiguous findings research has found on gratitude and academic outcomes, we suggest this implies that gratitude has an *indirect* relationship with academic outcomes like engagement.

Psychological Well-Being Effects Gratitude and Academic Engagement

Froh, Sefick, and Emmons' (2008) study illustrated that gratitude effected adolescents in a very similar manner to adults by creating an upward spiral of positive emotion, but also in a novel way, as gratitude appeared to influence school satisfaction. Fredrickson (2004) specifically supposes that cultivating gratitude in students nurtures beneficial processes like creativity and motivation, both of which build resources for well-being. The relationship between gratitude and well-being has been intensely studied (*see* Wood, Froh, & Geraghty, 2010 for review). A strong relationship between gratitude and well-being makes sense, as frequent feelings of gratitude indicate an orientation towards noticing and appreciating the positives in life (Wood, Maltby, Stewart, Linley, & Joseph, 2008). An orientation for the positive leads to greater overall appraisals of life and the use of more adaptive coping strategies (Wood, Joseph, & Linley, 2007) that can be especially beneficial for students.

Gratitude has been shown to be highly related to both subjective well-being (SWB) (Wood, Froh, & Geraghty, 2010) and psychological well-being (PWB) (Kashdan, Uswatte, & Julian, 2006; Wood, Joseph, & Maltby, 2009). While SWB involves frequent positive affect, little negative affect, and overall satisfaction with life (Diener, 1984), PWB involves a meaningful life with constructive activity and growth (Wood, Joseph, & Maltby, 2009). Aspects of PWB include self-acceptance, positive relationships with others, personal growth, purpose in life, environmental mastery, and autonomy (Ryff, 1989; Ryff & Keyes, 1995). The relationship between gratitude and PWB, in particular, is evidence of Fredrickson's broaden and build theory. Wood, Joseph, and Maltby (2009) found that gratitude correlated with all six domains of PWB, even when controlling for

the Big Five personality traits. Further, greater PWB in students predicted academic motivation and engagement in Martin et al. (2014) study of high school students.

Purpose of the Study

The objective of the present study was to investigate the relationships among gratitude, PWB, and academic engagement. While there is empirical evidence of gratitude predicting PWB and PWB predicting academic motivation and engagement, to date, there is no study that indicates that increased gratitude leads to greater PWB which, in turn, leads to greater academic engagement. Evidence of the indirect relationship PWB has on gratitude and academic engagement is routed in Fredrickson's broaden and build theory of positive emotion, which states that positive emotions, like gratitude, broaden and build personal resources.

The first goal of the study was to combine three validated scales in order to demonstrate that each higher order latent construct of gratitude, PWB, and academic engagement conformed to one model of student engagement. *Hypothesis 1* states that *gratitude*; measured using the three sub-scales of the Gratitude, Resentment, and Appreciation Test-Revised: sense of abundance, appreciation of simple pleasures, and social appreciation, *psychological well-being*; measured using three sub-scales of Ryff scales of Psychological Well-Being: environmental mastery, self-acceptance, and personal growth, and *academic engagement*; measured using three sub-scales of the Patterns of Adaptive Learning Scales: mastery goal orientation, classroom mastery goal structure, and academic efficacy, will conform to one structural model.

The second goal of the study was to use the structural model in order to perform structural equation modeling to demonstrate relationships among gratitude, psychological

well-being, and academic engagement. *Hypothesis 2* states that the higher order latent construct of gratitude predicts psychological well-being and that, gratitude and psychological well-being together, predict academic engagement.

Chapter Two:

Method

Participants

The current study sample consisted of 372 university students enrolled in a public Northeastern university. Participants were recruited through psychology courses and by research assistants. Forty-two participants were excluded from data analysis due to missing or incomplete data, leaving a total of 330 participants; 83% female and 17% male. The majority (92.1%) of the sample were aged between 18 and 24 years. Most participants were white (62.1%), 22.4% were African American, 4.8% were Asian, 0.3% were American Indian or Alaskan Native, and 10.3% were listed as other. The average number of semesters completed by the sample was 6.63 semesters ($SD = 3.14$; ranging from 1 to 17 semesters), which makes the majority of the sample in junior standing. When asked about their parents' highest level of education, the most frequent response for maternal education level was a "four-year degree" (30.3%) followed by a "professional degree" (20.9%) and the most frequent response for paternal education level was also a "four-year degree" (25.8%) followed by a "high school graduate" (25.5%).

Measures

Demographic Information. Participants were asked to indicate their gender, ethnicity, age, current major, educational progress, expected degree completion, and parental education level.

Gratitude. The Gratitude, Resentment, and Appreciation Test-Revised (GRAT-R; Watkins, Woodward, Stone, & Kolts, 2003; see Appendix 1) is a 44-item measure of

three factors of dispositional gratitude: sense of abundance (e.g., “Life has been good to me” ; $\alpha = .80$), appreciation of simple pleasures (e.g., “Often I’m just amazed at how beautiful the sunsets are” ; $\alpha = .87$), and social appreciation (e.g., “Part of really enjoying something good is being thankful for that thing” ; $\alpha = .76$). Items are measured on a Likert scale ranging from 1 (strongly disagree) to 9 (strongly agree). The GRAT-R has been shown to have good internal consistency, factorial validity, and construct validity ($\alpha = .92$, Watkins et al., 2003).

In the current sample, the GRAT-R demonstrated marginal to good internal consistency for each of the sub-scales: sense of abundance ($\alpha = .92$), appreciation for simple pleasures ($\alpha = .88$), and social appreciation ($\alpha = .81$). Together, the sub-scales comprised the latent variable, gratitude, for the model.

Psychological Well-Being. The Ryff Scales of Psychological Well-Being (RYFF; Ryff, 1989; see Appendix 2) measures six factors of psychological well-being: autonomy (e.g., “My decisions are not usually influenced by what everyone else is doing”; $\alpha = .83$), environmental mastery (e.g., “In general, I feel I am in charge of the situation in which I live”; $\alpha = .77$), personal growth (e.g., “I have a sense that I have developed a lot as a person over time”; $\alpha = .82$), positive relations with others (e.g., “Most people see me as loving and affectionate”; $\alpha = .80$), purpose in life (e.g., “I am an active person in carrying out the plans I set for myself”; $\alpha = .84$), and self-acceptance (e.g., “In general, I feel confident and positive about myself”; $\alpha = .90$) (Van Dierendonck, 2004). Participants indicate agreement on a 1 (strongly disagree) to 6 (strongly agree) Likert scale. The Ryff scales have been extensively used in previous empirical research (Ryff & Keyes, 1995).

For the purposes of this study, environmental mastery, personal growth, and self-acceptance were used in the structural model to represent the latent variable, psychological well-being. In the current sample, the RYFF scales demonstrated poor to marginal internal consistency: environmental mastery ($\alpha = .50$), self-acceptance ($\alpha = .83$), and personal growth ($\alpha = .78$).

Academic Engagement. The Patterns of Adaptive Learning Scales (PALS; Midgley et al., 2000; see Appendix 3) was used to measure three dimensions of academic engagement. The PALS was developed to assess personal achievement goal orientations, perceptions of teacher's goals, perceptions of the goal structures in the classroom, achievement-related beliefs, attitudes and strategies, and perceptions of parents and home life. For the purpose of this study, three subscales were used: mastery goal orientation ($\alpha = .86$), classroom mastery goal structure ($\alpha = .76$), and academic efficacy ($\alpha = .78$). The five point Likert scale includes items such as "An important reason why I do my classwork is because I like to learn new things," and "In our class, learning new ideas and concepts is very important" and "I'm certain I can master the skills taught in class this year." Subscales of the PALS have been used in numerous published studies.

In the current study, the RYFF scales demonstrated good internal consistency: mastery goal orientation ($\alpha = .87$), classroom mastery goal structure ($\alpha = .82$), and academic efficacy ($\alpha = .89$). Together, these three sub-scales comprised the latent variable, academic engagement, for the model.

Procedure

Participants for this study were given a Qualtrics survey online. Prior to beginning the survey, participants read the informed consent form that outlined information on the

study and granted permission to stop at any time. After agreeing to participate in the study, participants were guided through completing demographics and the three measures. After completing the measures, participants were invited to enter their email address for the chance to win one of 10 \$50 VISA gift cards. Winners were randomly selected at the end of data collection through the use of a random number generator and were notified via email. At the completion of the survey, participants were thanked for their time and given contact information should they have any questions.

Data Analysis

Means, standard deviations, Cronbach's alpha coefficients, and bivariate correlations were computed for every study variable using IBM SPSS. Next, confirmatory factor analyses (CFA), implemented with the lavaan package for The Comprehensive R Archive Network (version 3.3.3; R), were conducted on a theoretically specified measurement model that included all items of each scale and subscales.

The next step in data analysis involved confirming the factor structures of gratitude, psychological well-being, and academic engagement. Gratitude was measured using the three sub-scales of the GRAT-R: sense of abundance, appreciation for simple pleasures, and social appreciation. Psychological well-being was measured using three sub-scales of the RYFF: environmental mastery, self-acceptance, and personal growth. Academic engagement was measured using three sub-scales of the PALS: mastery goal orientation, classroom mastery goal structure, and academic efficacy. Confirmatory factor analyses were computed on each individual measure in order to check that these measures were successfully measuring their intended sub-constructs.

Next, confirmatory factor analyses were used in order to create one measurement model that tested underlying theory that gratitude, psychological well-being, and academic engagement were all structurally distinct constructs, yet all interrelated. This model included each second order factor of gratitude, psychological well-being, and academic engagement. This model also included all first order factors of gratitude (sense of abundance, appreciation for simple pleasures, social appreciation), psychological well-being (environmental mastery, self-acceptance, personal growth), and academic engagement (mastery goal orientation, classroom mastery goal structure, academic efficacy). Creating a measurement model through the use of confirmatory factor analyses prior to completing structural equation modeling is consistent with previous research (Jones, You, & Furlong, 2013; Ouweneel, Le Blanc, & Schaufeli, 2011). Performing confirmatory factor analyses prior to structural equation modeling is considered a necessary prerequisite for establishing unidimensionality, validity, and reliability of the measurement model that is needed in order to test hypotheses with structural models (Awang, 2012).

Missing data was estimated using the full information maximum likelihood (FIML) method with the *lavaan* package for R. Rather than using standard listwise deletion, which would impact model power, FIML handles missing data within the analysis model. In doing so, estimates of population parameters were produced from the sample data (Collins, Schafer, & Kam, 2001). Using the FIML method kept the study's sample size at 330, which is considered acceptable for the use of structural equation modeling (Kline, 2015).

Absolute and relative indices were used to assess the goodness-of-fit of the models. Absolute indices included were the chi square (χ^2) statistic, the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Values under 0.08 for the RMSEA and the SRMR are indicative of acceptable fit, with smaller values indicating better fit (Hu & Bentler, 1999; MacCallum, Browne, & Sugawara, 1996). Models with RMSEA values over 0.10 should lead to model rejection. In SEM, a significant chi square indicates poor model fit. However, the chi square test is sensitive to sample size and is almost always significant for samples over 200 (Kenny, 2015). Chi square also indicates significance with large correlations within the model (Kenny, 2015). The RMSEA can also be sensitive to small dfs (Kenny, 2015). As such, many fit indices should be taken into account when assessing overall model fit.

Because chi square and RMSEA are sensitive measures, relative goodness of fit indices were also used. These indices included the Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI). For both the CFI and the TLI, values between 0.90 and 0.95 are indicative of marginal fit and values greater than 0.95 indicate good fit (Hu & Bentler, 1999). The Akaike information criterion (AIC) was also included in order to compare competing models. Lower AIC values indicate a better fit, such that the model with the lowest AIC value is the best fitting model (Kenny, 2015).

Chapter Three:

Results

Preliminary analyses

Means, standard deviations, Cronbach's alpha coefficients, and bivariate correlations of all research variables are reported in Table 1. In line with our hypotheses, Table 1 shows that all three aspects of gratitude (sense of abundance, appreciation for simple pleasures, and social appreciation) are positively related to all three aspects of psychological well-being (environmental mastery, self-acceptance, and personal growth) and that psychological well-being is related to academic engagement (mastery goal orientation, classroom mastery goal structure, and academic efficacy).

Confirmatory Factor Analyses

Confirmatory factor analyses (CFA) were performed on all research variables to confirm that the constructs of gratitude, psychological well-being, and academic engagement were all distinct and interrelated.

The first step of these analyses involved testing each construct (gratitude, psychological well-being, academic engagement) to confirm that sub-constructs loaded onto a single, higher-order latent factor. Results of these three CFAs showed poor fit for each construct, *see* Table 2. The next step of these analyses tested one, single measurement model that included all three of the study constructs at once. This model (measurement model; MM) tested a three factor model that suggested that each of the factors (gratitude, psychological well-being, and academic engagement) were all freely interrelated yet distinct constructs. Results for CFAs of the models are provided in Table 2. Results indicate poor model fit for each study construct alone, as well as for one,

overall model. This suggests that gratitude, psychological well-being, and academic engagement do not conform to one model of student engagement.

Hypothesis 1 stated that *gratitude*; measured using the three sub-scales of the Gratitude, Resentment, and Appreciation Test-Revised: sense of abundance, appreciation of simple pleasures, and social appreciation, *psychological well-being*; measured using three sub-scales of Ryff scales of Psychological Well-Being: environmental mastery, self-acceptance, and personal growth, and *academic engagement*; measured using three sub-scales of the Patterns of Adaptive Learning Scales: mastery goal orientation, classroom mastery goal structure, and academic efficacy, would conform to one structural model. Results did not support hypothesis 1.

Structural Equation Modeling

Due to the null findings of the confirmatory factor analyses, structural equation modeling did not take place. *Hypothesis 2* stated that the higher order latent construct of gratitude would predict psychological well-being and that, gratitude and psychological well-being together, would predict academic engagement. Results did not support hypothesis 2. Because confirmatory factor analyses indicated that the higher order latent constructs of gratitude, psychological well-being, and academic engagement did not conform to their intended latent constructs or to one measurement model, structural equation modeling could not take place.

Chapter Four:

Discussion

Review of Findings

The goal of the current study was to establish a model of student engagement that was based on Fredrickson's (1998) broaden and build theory of positive emotions. This model suggested that the positive emotion of gratitude would broaden students' psychological well-being and build a strong sense of academic engagement. In order to test this, the study tested the individual measures of gratitude, psychological well-being, and academic engagement in order to confirm factor structure. Then, gratitude, psychological well-being, and academic engagement were combined into one, overall, measurement model. Results of the confirmatory factor analyses indicated that the study variables did not conform to their intended factor structure and did not support the proposed model. The present study intended to utilize structural equation modeling of the measurement model in order to test the relationships among gratitude, psychological well-being, and academic engagement. However, due to the results of the confirmatory factor analyses, structural equation modeling did not take place. These results indicate that gratitude, psychological well-being, and academic engagement were not able to conform to one model of student engagement.

The current study expected to better understand in-class student engagement. The classroom mastery goal structure dimension of academic engagement assesses student perceptions for the purpose of engaging in academic work in the classroom (Midgley, et al., 2000). More specifically, the classroom mastery goal structure suggests that the purpose for engaging in academic work in the classroom is to develop competence, rather

than just engaging in the classroom to receive a good grade. In the context of the hypothesized model, this would mean that grateful students would also show psychological well-being. Together, gratitude and psychological well-being would explain the reason these students come to class: which is to develop academic competence.

Further, the current study expected to better understand in-class student engagement in the context of the different sub-scales of gratitude. For example, it was thought that if students reported that they did not feel deprived of anything in their life, or they reported having a sense of abundance, they would also demonstrate psychological well-being. In turn, a sense of abundance and psychological well-being would, together, impact motivation for coming to class. Most notably, though, the current study expected to find that social appreciation would be the largest indicator of in-class student motivation. For example, if students were able to appreciate the contributions of others to their well-being, they would show greater psychological well-being. Social appreciation and psychological well-being, together, would best explain students' purpose for engaging in the classroom. This relationship would make sense because students' in-class engagement and motivation is likely highly dependent upon the teacher. In-class engagement and motivation could also be impacted by friends that share the class with the student or by the parents of the student that support their learning. Although the present study did not explore these specific relationships, future research should directly measure the contribution of others to student engagement.

Limitations and future directions

Although the current study did not successfully demonstrate the relationships between gratitude, psychological well-being, and academic engagement, the results of this study could be a consequence of a number of limitations. The most significant limitation of this study was the poor fit of the model that included all constructs and their respective sub-constructs. Despite the current study using empirically validated measures in order to measure gratitude (Watkins, Woodward, Stone, & Kolts, 2003), psychological well-being (Ryff, 1989), and academic engagement (Midgley, et al., 2000), the poor initial fit could be due to a number of factors. First, each individual scale was not developed for the purpose of combining with other scales. As such, when these scales were combined, many items of one scale heavily loaded onto latent constructs of another scale. For example, during the initial CFA, modification index values demonstrated that an item thought to be measuring personal growth, a sub-construct of psychological well-being, was actually better explained as a sense of abundance, a sub-construct of gratitude. This could indicate that gratitude, psychological well-being, and academic engagement are not structurally different concepts. Future research should identify unique factor structures of positive psychology constructs. Another reason for the poor initial fit of the model could be that the sample size was too small. Although the study's sample size of 330 is considered good for the use of structural equation modeling, that number depends on the complexity of the model (Kline, 2015). A model that included all items of each construct created a model with too many parameters and observed variables for a sample size of 330 to accurately measure. Future research might conduct a replication study, with

a larger sample size, in order to better understand the relationships among gratitude, psychological well-being, and academic engagement.

In addition, the current study utilized self-report measures exclusively. The use of self-report measures leaves the possibility for measurement error. In the current study, the means of the sub-constructs of academic engagement (mastery goal orientation, classroom mastery goal structure, academic efficacy) suggest ceiling effects.

Additionally, the alpha coefficients for the sub-constructs of psychological well-being (environmental mastery, self-acceptance, personal growth) indicate rather poor internal consistency. This means that, in the current study, the different sub-scales of the RYFF did not produce similar scores, which suggests measurement error. Future research may wish to gather more objective information on participant, such as GPA or memberships in on-campus academic groups as criteria for academic engagement. Further, adding a manipulation that would facilitate gratitude and assess the subsequent impact on psychological well-being and academic engagement might provide further evidence for a directional relationship and increase internal validity. For example, research may have student participants complete an in-class gratitude inducing activity, such as the gratitude visit. The gratitude visit is an empirically validated manipulation to elicit gratitude by asking a person to identify someone that has had a significant impact in their life, express gratitude in a letter, and then deliver the letter to that person (Seligman, Steen, Park, & Peterson, 2005). Eliciting gratitude with this method would correspond closely to the social appreciation sub-construct of gratitude that was used in this study.

Finally, the goal of the study was to demonstrate that gratitude lead to psychological well-being and psychological well-being lead to academic engagement.

However, the study was not able to assess directionality due to the use of a cross-sectional design. That is, this study could not definitively show that a model of student engagement began with gratitude. The use of a cross-sectional design suggests reciprocal relationships among variables, rather than directional relationships. Future research might utilize a cross-sequential design that assesses gratitude, psychological well-being, and academic engagement at multiple time points in order to better understand the directionality of this relationship.

Previous research has also found reciprocal relationships among positive psychology constructs (Ouweneel, Le Blanc, & Schaufeli, 2011), which could suggest that there is no one route to the good life. Rather, living the good life is a dynamic and multifaceted process. Weiss et al. (2002) called this synergistic effect of positive traits *covitality*. Jones et al. (2013) found that the positive psychology constructs of self-efficacy, optimism, hope, hedonia, and gratitude conformed to fit onto one, second-order covitality construct and that the construct of covitality was positively related to personal adjustment and negatively related to psychological illness symptoms. In terms of the present study, the reason for heavy cross loadings between gratitude, psychological well-being, and academic engagement could have been due to covitality between them, which may have also accounted for the reciprocal relationships among the variables.

Summary

The primary goal of this study was to explore the relationships among gratitude, psychological well-being, and academic engagement. The results of the current study do not support a model of student engagement that includes gratitude and psychological well-being.

More research is needed to better understand the relationships among gratitude, psychological well-being, and academic engagement. These findings call for a better understanding of the unique factor structures of positive psychology constructs. Although the current study was not able to confirm hypotheses about student engagement, the current study does highlight the complex nature of relationships among positive psychology constructs.

Table 1. Means, standard deviations, correlations, and Cronbach's alpha coefficients of the research variables (N=274).

	M	SD	α	1	2	3	4	5	6	7	8	9	10	11	12
1. Gratitude	6.96	1.04		-											
2. Sense of Abundance	6.76	1.39	.92	.867**	-										
3. Appreciation for Simple Pleasures	6.99	1.25	.88	.770**	.403**	-									
4. Social Appreciation	7.23	1.06	.81	.828**	.584**	.608**	-								
5. Psychological Well-Being	4.39	0.69		.688**	.657**	.469**	.534**	-							
6. Environmental Mastery	4.01	0.66	.50	.465**	.459**	.283**	.376**	.821**	-						
7. Self-Acceptance	4.33	0.98	.83	.632**	.638**	.387**	.481**	.928**	.703**	-					
8. Personal Growth	4.83	0.78	.78	.657**	.570**	.531**	.508**	.819**	.470**	.635**	-				
9. Academic Engagement	4.31	0.57		.413**	.284**	.383**	.401**	.507**	.323**	.411**	.569**	-			
10. Mastery Goal Orientation	4.39	0.66	.87	.347**	.217**	.343**	.353**	.403**	.228**	.321**	.483**	.869**	-		
11. Classroom Mastery Goal Structure	4.38	0.61	.82	.355**	.224**	.350**	.360**	.369**	.195**	.283**	.470**	.897**	.763**	-	
12. Academic Efficacy	4.15	0.75	.89	.358**	.286**	.295**	.320**	.527**	.400**	.448**	.509**	.806**	.502**	.544**	-

Notes: *M* = mean; *SD* = standard deviation; α = Cronbach's alpha.

** $p < 0.01$.

Table 2. CFA fit indices for each study construct and overall measurement model ($N = 330$).

	X2	df	RMSEA	SRMR	CFI	TLI	AIC
Gratitude	2370.83**	776	0.08	0.09	0.74	0.73	46256.33
Psychological Well-Being	738.80**	186	0.10	0.06	0.80	0.76	19670.57
Academic Engagement	430.51**	101	0.10	0.06	0.89	0.87	9931.81
MM	8509.07**	2913	0.08	0.11	0.55	0.55	137070.77

** $p < .001$.

Appendix 1. The Gratitude, Resentment, and Appreciation Test-Revised (GRAT-R).

OPINION QUESTIONNAIRE -R

Please provide your honest feelings and beliefs about the following statements which relate to you. There are no right or wrong answers to these statements. We would like to know how much you feel these statements are true or not true of you. Please try to indicate your true feelings and beliefs, as opposed to what you would like to believe. Respond to the following statements by filling in the number that best represents your real feelings in the blank provided next to each statement. Please use the scale provided below, and please choose one number for each statement (i.e. don't circle the space between two numbers).

1	2	3	4	5	6	7	8	9
I		I		I feel		I		I
strongly		disagre		neutral		mostly		strongly
disagre		e		about		agree		agree
e		somew		the		with the		with the
		hat		stateme		stateme		stateme
				nt		nt		nt

1. ___ I couldn't have gotten where I am today without the help of many people.
2. ___ I think that life has been unfair to me.
3. ___ It sure seems like others get a lot more benefits in life than I do.
4. ___ I never seem to get the breaks or chances that other people do.
5. ___ Often I'm just amazed at how beautiful the sunsets are.
6. ___ Life has been good to me.
7. ___ There never seems to be enough to go around and I never seem to get my share.
8. ___ Often I think, "What a privilege it is to be alive."
9. ___ Oftentimes I have been overwhelmed at the beauty of nature.
10. ___ I feel grateful for the education I have received.
11. ___ Many people have given me valuable wisdom throughout my life that has been important to my success.
12. ___ It seems like people have frequently tried to impede my progress.
13. ___ Although I think it's important to feel good about your accomplishments, I think that it's also important to remember how others have contributed to my success.
14. ___ I really don't think that I've gotten all the good things that I deserve in life.
15. ___ Every Fall I really enjoy watching the leaves change colors.
16. ___ Although I'm basically in control of my life, I can't help but think about all those who have supported me and helped me along the way.
17. ___ Part of really enjoying something good is being thankful for that thing.
18. ___ Sometimes I find myself overwhelmed by the beauty of a musical piece.
19. ___ I'm basically very thankful for the parenting that was provided to me.
20. ___ I've gotten where I am today because of my own hard work, despite the lack of any help or support.

21. ___ Over the December holidays, the presents I get aren't as good or as many as others seem to get.
22. ___ Sometimes I think, "Why am I so fortunate so as to be born into the family and culture I was born into?"
23. ___ One of my favorite times of the year is Thanksgiving.
24. ___ I believe that I am a very fortunate person.
25. ___ I think that it's important to "Stop and smell the roses."
26. ___ More bad things have happened to me in my life than I deserve.
27. ___ I really enjoy the changing seasons.
28. ___ Because of what I've gone through in my life, I really feel like the world owes me something.
29. ___ I believe that the things in life that are really enjoyable are just as available to me as they are to the very rich.
30. ___ I love to sit and watch the snow fall.
31. ___ I believe that I've had more than my share of bad things come my way.
32. ___ Although I think that I'm morally better than most, I haven't gotten my just reward in life.
33. ___ After eating I often pause and think, "What a wonderful meal."
34. ___ Every spring, I really enjoy seeing the flowers bloom.
35. ___ I think that it's important to pause often to "count my blessings."
36. ___ I think it's important to enjoy the simple things in life.
37. ___ I basically feel like life has ripped me off.
38. ___ I feel deeply appreciative for the things others have done for me in my life.
39. ___ I feel that God, or fate, or destiny, doesn't like me very well.
40. ___ The simple pleasures of life are the best pleasures of life.
41. ___ I love the green of spring.
42. ___ For some reason I never seem to get the advantages that others get.
43. ___ I think it's important to appreciate each day that you are alive.
44. ___ I'm really thankful for friends and family.

Appendix 2. The Ryff Scales of Psychological Well-Being (RYFF).

Ryff's Psychological Well-Being Scales (PWB), 42 Item version Please indicate your degree of agreement using a score ranging from 1(strongly disagree) to 6(strongly agree) to the following sentences.

1. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.
2. In general, I feel I am in charge of the situation in which I live.
3. I am not interested in activities that will expand my horizons.
4. Most people see me as loving and affectionate.
5. I live life one day at a time and don't really think about the future.
6. When I look at the story of my life, I am pleased with how things have turned out.
7. My decisions are not usually influenced by what everyone else is doing.
8. The demands of everyday life often get me down.
9. I think it is important to have new experiences that challenge how you think about yourself and the world.
10. Maintaining close relationships has been difficult and frustrating for me.
11. I have a sense of direction and purpose in life.
12. In general, I feel confident and positive about myself.
13. I tend to worry about what other people think of me.
14. I do not fit very well with the people and the community around me.
15. When I think about it, I haven't really improved much as a person over the years.
16. I often feel lonely because I have few close friends with whom to share my concerns.
17. My daily activities often seem trivial and unimportant to me.

18. I feel like many of the people I know have gotten more out of life than I have.
19. I tend to be influenced by people with strong opinions.
20. I am quite good at managing the many responsibilities of my daily life.
21. I have the sense that I have developed a lot as a person over time.
22. I enjoy personal and mutual conversations with family members or friends.
23. I don't have a good sense of what it is I'm trying to accomplish in life.
24. I like most aspects of my personality.
25. I have confidence in my opinions, even if they are contrary to the general consensus.
26. I often feel overwhelmed by my responsibilities.
27. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.
28. People would describe me as a giving person, willing to share my time with others.
29. I enjoy making plans for the future and working to make them a reality.
30. In many ways, I feel disappointed about my achievements in life.
31. It's difficult for me to voice my own opinions on controversial matters.
32. I have difficulty arranging my life in a way that is satisfying to me.
33. For me, life has been a continuous process of learning, changing, and growth.
34. I have not experienced many warm and trusting relationships with others.
35. Some people wander aimlessly through life, but I am not one of them
36. My attitude about myself is probably not as positive as most people feel about themselves.
37. I judge myself by what I think is important, not by the values of what others think is important.

38. I have been able to build a home and a lifestyle for myself that is much to my liking.
39. I gave up trying to make big improvements or changes in my life a long time ago.
40. I know that I can trust my friends, and they know they can trust me.
41. I sometimes feel as if I've done all there is to do in life.
42. When I compare myself to friends and acquaintances, it makes me feel good about who I am.

Appendix 3. The Patterns of Adaptive Learning Scales (PALS).

HERE ARE SOME QUESTIONS ABOUT YOURSELF AS A STUDENT IN THIS CLASS. PLEASE CIRCLE THE NUMBER (1: NOT AT ALL – 5: VERY TRUE) THAT BEST DESCRIBES WHAT YOU THINK.

Mastery Goal Orientation

1. It's important to me that I learn a lot of new concepts this year.
2. One of my goals in class is to learn as much as I can.
3. One of my goals is to master a lot of new skills this year.
4. It's important to me that I thoroughly understand my class work.
5. It's important to me that I improve my skills this year.

Classroom Mastery Goal Structure

1. In our class, trying hard is very important.
2. In our class, how much you improve is really important.
3. In our class, really understanding the material is the main goal.
4. In our class, it's important to understand the work, not just memorize it.
5. In our class, learning new ideas and concepts is very important.
6. In our class, it's OK to make mistakes as long as you are learning.

Academic Efficacy

1. I'm certain I can master the skills taught in class this year.
2. I'm certain I can figure out how to do the most difficult class work.
3. I can do almost all the work in class if I don't give up.
4. Even if the work is hard, I can learn it.
5. I can do even the hardest work in this class if I try.

Appendix 4. Cover Letter for Exempt Research.



Dear Participant,

My name is Rebecca N. Rochowiak and I am a graduate student in the Department of Psychology at Towson University. As part of the research for my master's thesis, I will be conducting a survey to determine whether well-being mediates the effect of gratitude on academic engagement. Participation in this study is voluntary. If you choose to participate in my project, you will be asked to complete a short survey. It is not necessary to answer every question, and you may discontinue your participation in the project at any time. Your decision whether or not to participate in the project or to withdraw from the project at any time will in no way affect your class standing. Your professor has given me permission to conduct my study in your class; she will not know whether or not you have participated, or, if you did, how you responded.

If you do choose to participate in the study, your participation will be completely anonymous. Neither anyone reading the results of the survey nor I will be able to identify you. Please do not put your name or any other identifying marks on the survey form. At the end of the survey, you may enter your email address for the chance to win one of 10 \$50 VISA gift cards.

If you have any questions about the project, you may contact me or my faculty advisor, Dr. Maria P. Fracasso at (410) 704-3449, or the Chairperson of Towson University's Institutional Review Board for the Protection of Human Participants, Dr. Elizabeth Katz, at (410) 704 - 3207. A copy of the results of the survey, reported in aggregate form, will be available to you upon completion of my project, if you would like to see it.

Thank you for your time.

Sincerely,
Rebecca N. Rochowiak
Graduate Student

THIS PROJECT HAS BEEN REVIEWED BY THE INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN PARTICIPANTS AT TOWSON UNIVERSITY.

Appendix 5. Institutional Review Board Approval.

5/22/2017 Towson University Mail - IRB Approval # 1610007758


Rebecca Rochowiak <rrocho1@students.towson.edu>

IRB Approval # 1610007758
1 message

Taylor, Amy L. <altaylor@towson.edu> Tue, Nov 22, 2016 at 3:05 PM
 To: "Rochowiak, Rebecca" <rrocho1@students.towson.edu>, "Fracasso, Maria" <Fracasso@towson.edu>
 Cc: IRB <irb@towson.edu>

The IRB has approved your protocol "A Study of the Mediatlional Relationship Psychological Well-Being has on Gratitude and Academic Engagement in College Students " effective 11/22/2016

Your IRB protocol can now be viewed by your faculty advisor in MyOSPR. For more information, please visit:
<http://www.towson.edu/academics/research/sponsored/myospr.html>

If you should encounter any new risks, reactions, or injuries to subjects while conducting your research, please notify IRB@towson.edu. Should your research extend beyond one year in duration, or should there be substantive changes in your research protocol, you will need to submit another application.

We do offer training and orientation sessions for faculty/staff, please sign up for one of the sessions:
<http://fusion.towson.edu/www/signupGeneric/index.cfm?type=OSPR>

Check back to that registration site frequently – we'll post additional sessions for January and spring semester soon.

Regards,
 Towson IRB

Amy L. Taylor, MBA, CRA · Assistant Vice President for Research

Office of Sponsored Programs & Research

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ROCHOWIAK, REBECCA

EDUCATION

Towson University, Towson, MD

M.A. in Psychology

Current GPA: 3.911

*expected***2017**

Area of Concentration: Experimental Psychology

Thesis: "A Model of Gratitude, Psychological Well-Being, and Academic Engagement in College Students"

Thesis Advisor: Maria Fracasso, PhD

Towson University, Towson, MD

B.S. in Psychology

Graduating GPA: 3.625

Departmental Honors

2015

Area of Concentration: Experimental Psychology

Honors Thesis: "Determining Levels of Gratitude in Middle Childhood"

Thesis Advisor: Maria Fracasso, PhD

AREAS OF INTEREST

Developmental Psychology

Positive Psychology

GRANTS, HONORS AND AWARDS

Graduate Research Grant, *Towson University***October****2016**Graduate Travel Research Grant, *Towson University***October****2015**Student Research Award – Honorable Mention, *Association for Psychological Science***May 2015**Undergraduate Travel Research Grant, *Towson University***May 2015**Undergraduate Research Grant, *Towson University***October****2014**

TEACHING EXPERIENCE

Towson University, *Towson, MD***Substitute Teacher – to Sora Rosen, MA in "Developmental Psychology"****2017**

Responsible for lecturing course content material and helping students with projects for two weeks.

Teaching Assistant – to Maria Fracasso, Ph.D. in "Research Methods"**2016**

Helped develop syllabus and grade student coursework, taught subject material on data analysis

Teaching Assistant – to John Webster, Ed.D. in “Introduction to Psychology” 2015-2016

Collaborated on exam development, met with students upon request, held study sessions, graded all exams

Teaching Assistant – to Maria Fracasso, Ph.D. in “Adolescent Psychology” 2015

Met with students upon request, held weekly review sessions, administered exams

Teaching Assistant – to Maria Fracasso, Ph.D. in “Infant and Child Development” 2014

Met with students upon request, held weekly review sessions, administered exams

RELATED EXPERIENCE

Towson University, Towson, MD

Researcher

2014 – 2016

Helped run the lab on perceptions of parenting style by collecting and analyzing data, writing reports and grants, and traveling to report findings

PUBLICATIONS AND PRESENTATIONS

“A Model of Gratitude, Psychological Well-Being, and Academic Engagement in College Students”

Poster to-be presented at the Conference of Emerging Adulthood

Annual Convention, *Washington,*

DC

2017

“Physiological and Psychological Effects of Breath-Focused Meditation and Progressive Muscle Relaxation”

Poster presented at the Research & Creative Inquiry Form, *Towson,*

MD

2017

“Investigating Gratitude in Middle Childhood

Poster presented at the TU Undergraduate and Graduate Student

Research and Performance Expo, *Towson,*

MD

2016

“Gender Differences in Parenting Style on the Subjective Well-Being of Young Adults

Poster presented at the Conference of Emerging Adulthood,
Miami,
FL

2015

“Experiencing Gratitude in Middle Childhood”
Poster presented at the Association for Psychological Science
Annual Convention, *New York,*
NY

2015

MEMBERSHIPS

Association for Psychological Science
Maryland Psychological Association of Graduate Students

