THE DIFFERENTIAL EFFECTS OF A SELF-COMPASSION VERSUS MINDFULNESS MANIPULATION ON GROWTH-RELATED MINDSETS

by

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Abstract

Background: Research to date has only hinted at the relative roles of self-compassion and mindfulness in outcomes of psychological growth. This study aimed to delineate the relative contribution of self-compassion and mindfulness to outcomes related to psychological growth in an academic setting. Given that self-compassion is a more approach-oriented emotion regulation strategy than mindfulness, it was expected that a self-compassion reflection would increase positive mindsets and behaviours to growth, more so than either a mindfulness or control reflection exercise.

Methodology: Undergraduate UBCO students ($n = 174$) completed an online questionnaire before and after a reflection exercise. The questionnaire assessed state self-compassion, state mindfulness, intended coping strategies, intended goal orientation, perceived competence, acceptance of responsibility, and midterm marks in the same course. The questionnaire also assessed stress, positive affect, and negative affect as secondary outcomes. Reflective journaling exercises were implemented in order to induce self-compassionate or mindfulness responses to an unsatisfactory midterm grade.

Results: All three groups increased in positive affect, and significantly decreased in reported negative affect and stress toward their midterm grade after the reflection exercise. Despite some within-group changes in growth from baseline to post-test, there were no significant differences between groups on growth variables after the manipulation. Nonetheless, the more that students wrote, the more growth they reported from baseline to post-test.

Discussion: Remarkably, all three reflection conditions produced an increase in positive affect, and a decrease in negative affect and stress toward their midterm mark, demonstrating that doing active reflection, no matter what the reflection contents, can be beneficial when it comes to
coping with a difficult experience (i.e., reflecting). Further, results demonstrate the writing more is more beneficial than writing less about the difficult experience. Results do not support the a priori hypotheses that reflecting with self-compassion will result in greater growth than reflecting with either mindfulness or a control. Implications and future directions are discussed.
Lay Summary

Research suggests that a key difference between mindfulness and self-compassion concerns their relative importance to psychological growth. The main aim of the current research was to uncover whether or not, and how much, these differences occur in an academic setting. Students were asked to reflect on a recent unsatisfactory midterm grade using either mindfulness, self-compassion, or control reflection instructions. No significant differences were found between groups on elements of growth after the reflection exercise. Notably, stress and negative affect decreased in all three conditions and positive affect increased in the self-compassion and control conditions, demonstrating the importance of active reflection on academic stressors. Future research is encouraged to increase the strength of the manipulation to disentangle the practical differences between mindfulness and self-compassion.
Preface

As a co-investigator of this study, I formulated the research idea and hypotheses based on an extensive review of the literature. I designed all aspects of the study, including the baseline and post-test questionnaire, as well as the reflection instructions, and modified certain measures to suit the current study. In terms of performing the research, I wrote the research proposal, submitted the research proposal to the Behavioural Research Ethics Board (BREB) for ethics approval and completed various provisos that were requested. I wrote a human subject pool system advertisement and was responsible for giving credit to students via the online SONA system. I trained a team of undergraduate research assistants to introduce the in-person questionnaire and reflection component of the study, and to encourage students to engage with the material as much as possible. I trained another team of undergraduate students to code the journaling responses based off of a set of coding criteria, which I also created for the purposes of this study. I created a resource sheet for students, which research assistants handed out at the end of the in-person session. In terms of analyses, I was responsible for data cleaning, all of the statistical analyses, and results interpretation. Lastly, I was responsible for writing all sections of the manuscript.

My primary supervisor, Dr. Derrick Wirtz, consulted with me on this project from conception to completion. He provided feedback during its implementation and advised on statistical analysis and manuscript writing. He also reviewed the first draft of this research paper. Dr. Brian O'Connor also advised on statistical analyses.

Approval for carrying out these research studies was obtained by the UBC Behavioural Research Ethics Board (H18-02243)
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Growth Variables

For the purposes of this thesis, “growth variables” refers to outcome measures used in the current study that have shown to be related to success and thriving in an academic environment. Researchers have defined growth as it is relevant to their specific sample. Thus, growth was measured in the current study using psychological indicators that predict success in an academic setting, including approach-oriented coping strategies (i.e., active, planning, and positive reinterpretation and growth), mastery goal orientation, perceived competency, and acceptance of responsibility (i.e., attributing the cause of the negative event to ‘something I did’, and accepting fault for the event).

Non-Growth Variables

For the purposes of this thesis, “non-growth variables” refer to outcome measures used in the current study that were hypothesized as being unrelated to growth in an academic setting. These variables include less approach-oriented coping strategies (i.e., acceptance and denial), performance goal orientation, and variables that imply less growth-oriented acceptance of responsibility (i.e., attributing the cause of the event to ‘bad luck’, ‘the kind of person I am’, and ‘others’).
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Chapter 1: Introduction

With the transition into an undergraduate student comes personal, academic, and social development (Zimmaro et al., 2016), inevitably increasing one’s level of perceived stress. Indeed, research shows that almost 90% of students in a survey sample reported feeling overwhelmed, over 50% reported feeling hopeless, and 63% reported feeling very lonely (Miller, 2018). In one study, 45.5% of students reported experiencing greater than average stress, and 12.1% reported experiencing tremendous stress (Versaevel, 2015), and these levels of stress only seem to be rising (Dixon, 2018).

Unfortunately, it appears that many students may not be properly equipped to deal with these stressors (Durand-Bush, McNeill, Harding, & Dobransky, 2015). Students tend to implement maladaptive coping strategies such as sacrificing sleep, adapting unhealthy eating habits, and avoiding work altogether (Wrench, Garrett, & King, 2013). These coping strategies may have negative academic consequences, such as reduced achievement motivation (Karaman & Watson, 2017), academic performance (Durand-Bush et al., 2015), and increased risk for attrition (Respondek, Seufer, Stupnisky, & Nett, 2017). Poor academic performance may then lead to greater perceived stress, perpetuating a downward spiral of academic difficulty and psychological strain. These findings suggest that while there is without a doubt a need for stress management and psycho-educational interventions to help students manage stress, it is equally important to understand how students may increase their potential for academic thriving in a high-stress environment. Academic challenges may thus represent a unique opportunity for students to develop their strengths, confidence, and agency so that they may not only reduce stress to manageable levels, but to actually thrive in an academic environment (Denovan & Macaskill, 2017).
Psychological growth may be one such indicator of academic thriving. In an academic setting, psychological growth includes the positive outcomes gained as a result of overcoming potentially stressful academic experiences, such as greater perceived competency and endorsing a mastery-orientation to one’s goals (Neff, Hsieh, & Dijitterat, 2005). While mindfulness, the practice of non-judgmental awareness, has gained a great deal of interest recently in the literature as an effective stress-management strategy (Chambers, Gullone, & Allen., 2009; Zimmaro et al., 2016), relatively less is known about the effects of mindfulness on psychological growth (Shiyko, Hallinan, & Naito, 2017; Hanley, Baker, & Garland., 2017). Contrarily, much evidence exists confirming the association between self-compassion, a similar and yet distinguishable construct from mindfulness, in many areas of psychological growth, including self-efficacy (Iskender, 2009), mastery skills (Neff, Hsieh, & Dejitterat., 2005), decreased motivation anxiety (Williams, Stark, & Foster, 2008), incremental beliefs (Breines & Chen, 2012), willingness to accept responsibility after moral transgressions (Leary, Tate, Allen, Adams, & Hancock, 2007), healthy self-regulation (Dundas, Binder, Hansen, & Stige, 2017), goal disengagement and reengagement (Phillips & Ferguson, 2013), post-traumatic growth (Wong & Yeung, 2017), and hope (Yang, Zhang, & Kou, 2016).

Self-compassion is a more active, approach-oriented emotion-regulation technique than mindfulness and, as such, it is possible that self-compassion may play a larger role in increasing psychological growth in undergraduate students (Bluth & Blanton, 2014). However, few studies, if any, have examined both mindfulness and self-compassion simultaneously in order to compare their relative contributions to psychological growth. Understanding the ways in which self-compassion and mindfulness differ has the potential to provide researchers and practitioners with a better understanding for their use, for example, in determining whether popularized stress
reduction interventions such as MBSR (Kabat-Zinn, 2013) may be optimized by adding elements such as self-compassion that also promote growth.

1.1 Psychological Growth

Psychological growth is included in the literature as an element in the broader construct of psychological well-being (PWB), which aligns with the eudaimonic perspective of happiness and well-being; that is, elements of happiness that facilitate self-realization (Harrington, Loffredo & Perz, 2014). Psychological growth is measured differently depending on the stressful event in question and, as such, lacks a clear operational definition. Some posit that the product of psychological growth contains qualities of vitality, openness, and proactivity (Vansteenkiste & Ryan, 2013). A similar concept of stress-related growth has been defined as the positive consequences resulting from stressful experiences (Yanez, Stanton, Hoyt, Tennen, & Lechner, 2011). Still others consider growth to be, more generally, a function of any factor conducive to eudaimonic wellness (Vansteenkiste & Ryan, 2013).

Psychological growth can be considered both a process and an outcome. As a process, growth can be considered the building of personal resources as a result of challenging experiences, leading to subsequent resilience (Vansteenkiste & Ryan, 2013). As an outcome, growth may refer to the psychological benefits acquired after experiencing a stressful event (Joseph & Linley, 2006). Nonetheless, as mentioned, the indicators that constitute psychological growth seem to vary across different situations and populations. For example, a study measuring psychological growth in a population of refugees used ‘personal growth’, ‘career-related growth’, and ‘growth independent of returning to former identity’ as the indicators of growth, whereas a study using a sample of amputees used ‘self-efficacy’, ‘internal locus of control’, and ‘mastery’ as their indicators of growth (Wehrle, Klehe, Kira, & Zikic, 2018; Oaksford, Frude, &
Cuddihy, 2005). Considering the heterogeneity of the construct, as well as the specific context in which growth will be measured in this study, I chose to assess psychological growth using measures that have been shown to predict growth specifically as it is relevant in an academic setting; that is, the positive psychological benefits acquired after a bad midterm grade that have been linked with academic thriving. These include growth-related coping strategies, mastery goal orientation, perceived competency, and acceptance of responsibility. The relevance of these indicators to psychological growth will be discussed.

1.2 Mindfulness

Mindfulness has been defined as a non-judgmental awareness and attention to the present moment and generally involves two components (Bluth & Blanton, 2014; Boellinghaus, Jones, & Hutton, 2014). The first component is attention regulation, which includes attending fully to the present moment (thoughts, feelings, and sensations), becoming aware when attention wanders, and bringing the focus back on the present moment when attention wanders. It is considered a meta-cognitive skill because it requires both attention regulation and monitoring of the stream of consciousness (Bishop et al., 2004). The second component is the orientation to experience, which involves an attitude of openness, curiosity, and acceptance to the present moment (Bluth & Blanton, 2014; Boellinghaus, Jones, & Hutton, 2014); the aim is not to attempt to reproduce or attain a certain state, but rather to simply notice all states as they arise in the stream of consciousness (Bishop et al., 2004). Mindfulness, like self-compassion, is a skill that is developed with practice and maintained through its habitual utilization (Bishop et al., 2004).

1.3 Self-Compassion

Self-compassion involves endorsing a compassionate attitude toward the self in times of suffering (Neff, 2003a). More specifically, it involves extending kindness and understanding to
the self with a forgiving and caring attitude, as opposed to being harsh and self-critical. It also involves being mindful and adopting a non-judgmental, balanced awareness of negative thoughts and feelings as they are, rather than over-identifying with the negative experience through rumination or pushing them away through experiential avoidance. Lastly, it involves emphasizing our interconnectedness with others by realizing our common humanity, putting our negative experiences into the larger perspective of the human experience. Thus, all in all, there exist three components of self-compassion: self-kindness, mindfulness, and common humanity, all of which feed into and reinforce one another.

Self-compassion is an emotional approach form of coping with stress, which tends to lead to problem-focused coping and ultimately stress reduction (Neff, 2003a). Unlike self-esteem, which is contingent on maintaining feelings of positive self-worth, self-compassion is most powerful especially in times of failure (Neff, 2003a). Further, the motivating factor in self-compassion comes from the desire to maximize one’s potential rather than to bolster self-image (Neff, Hsieh, & Dejitterat., 2005).

It is important to note that mindfulness has been shown to be an important precursor to fostering self-compassion. Mindfulness creates an atmosphere of openness, awareness, and acceptance of experiences, which sets the stage for self-compassion (Boellinghaus, Jones & Hutton., 2014); it provides a healthy balanced state of awareness that gives us the mental space and clarity to extend kindness to ourselves (Neff, 2003a; Neff & Germer, 2013). That is, we need to acknowledge our painful experiences in order to exercise compassion towards them at all. In fact, mindfulness-based interventions (MBIs) have been found to increase levels of self-compassion in health care professionals (Boellinghaus, Jones, & Hutton., 2014), training
psychologists (Birnie, Speca, & Carlson, 2010), and community samples (Shapiro, Brown, & Biegel, 2007).

1.4 Mindfulness and Self-Compassion as Separate and Unique Constructs

Despite the relatively high correlation between mindfulness and self-compassion (ranging from .30 to .69, depending on the scale used; Beshai, Prentice, & Huang, 2018; Woods & Proeve, 2014; Baer, Lykins, & Peters, 2012; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Keng & Liew, 2017), they are nonetheless distinct psychological constructs. This has been shown both statistically (VIF = 1.54; Bluth & Blanton, 2014) and theoretically. In terms of scope, mindfulness includes the awareness of all experiences, whereas self-compassion involves mindful awareness exclusively to moments of suffering (Birnie, Speca, & Carlson., 2010).

Second, whereas the focus of mindfulness is on our relationship to internal experiences (i.e. sensations, emotions, and thoughts), the focus in self-compassion is on oneself as the experiencer – that is, one’s relationship with oneself (Neff & Germer, 2013; Bluth & Blanton, 2014). The most important distinction between mindfulness and self-compassion for the purposes of the current study is that mindfulness involves objective, ‘bare’ awareness, whereas self-compassion involves an active component of engaging in self-soothing behaviour when encountering self-suffering and recognizing suffering as part of the larger human experience (Bluth & Blanton, 2014). Thus, self-compassion entails acceptance of the present experience, plus an intention to bring care and concern to distressing experiences (Boellinghaus, Jones, & Hutton, 2014).

Taken together, it is reasonable to believe that self-compassion may go beyond mindfulness in that it may offer one emotional support in approaching difficult emotions and seeing them more clearly, making it easier for individuals to learn and from these negative experiences, thus promoting personal, and potentially academic, growth (Birnie, Speca, &
Self-compassion and Psychological Growth

Numerous studies have established a link between self-compassion and many different aspects of psychological growth. Iskender (2009) conducted a study in students and found that self-compassion was associated with higher levels of self-efficacy, as well as the belief that learning outcomes are the result of effort. Similarly, Neff, Hsieh, and Dejitterat (2005) found that self-compassion was associated with mastery goals, that is, goals that are motivated by the curiosity to learn and master a skill, rather than performance goals, which are motivated by the desire to enhance one’s sense of self-worth. This is relevant, as mastery goals may lead individuals to seek challenges and focus on improvement even in the face of potential failure, ultimately fostering growth (Deci & Ryan, 2000). This study also found that self-compassion was negatively associated with performance goals, which have been found to be associated with maladaptive motivational patterns that tend to be antithetical to subsequent effort and engagement (Ames & Archer, 1988).

Research also suggests that the association between self-compassion and mastery goals is mediated by greater perceived competence and lesser fear of failure (Neff, Hsieh, & Dejitterat., 2005). This is noteworthy, as greater perceived competence has been theorized to fuel activity pertinent to experience-dependent learning and growth (Deci & Ryan, 2000). That is, greater competence motivates curiosity, exploration, and consequently the stretching of one’s capacities, leading to further increases in perceived competence (Searle, Neville, & Waylen, 2017). Indeed, competence has been established as one of the basic psychological needs, which are essential to ongoing psychological growth, integrity, and well-being (Searle, Neville, & Waylen, 2017). In support of these findings, another study found that being high in self-compassion has been
associated with less motivation anxiety and procrastination tendency (Williams, Stark, & Foster, 2008). Though these studies are cross-sectional, they highlight an important link between self-compassion and healthy mental orientations to challenges that are associated with other important goal-fostering mentalities like intrinsic motivation (Neff, Hsieh, & Dejitterat., 2005).

Self-compassion may also lead to other growth-oriented mentalities. For instance, Breines and Chen (2012) found that self-compassion manipulation, consisting of a written 3-minute self-compassion reflection, increased students’ incremental beliefs; that is, the view that the self is changeable rather than fixed. This is notable, as endorsing incremental beliefs has been shown to be positively associated with growth-related behaviours, such as seeking out challenges, responding to failures in constructive ways, and having a desire for self-improvement (Breines & Chen, 2012). In fact, this study found that the self-compassion manipulation increased students’ self-improvement behaviours.

Another study found that increasing self-compassion led to lowered negative emotions in the face of a stressful event, an increased willingness to accept responsibility after a transgression, more accurate self-evaluations, and less downward social comparisons (Leary et al., 2007). These findings highlight the fact that, unlike self-esteem, self-compassion does not involve evaluations of self-worth, thus allowing ego-defenses and self-serving illusions to relax. This may be because self-compassion creates an atmosphere of warmth and understanding, which may make for a safe and non-threatening environment to explore issues without becoming overwhelmed with feelings of failure (Breines & Chen, 2012). This is important, as the more open and accepting we are of our experiences, the more insight we will have into our thoughts and behaviours, which ultimately leads to greater opportunities for growth.
Another important way in which self-compassion is related to growth is through its ability to act as a healthy coping strategy. Indeed, how one decides to cope with a difficult situation is important in the context of psychological adaptation and growth (Tuncay & Musabak, 2015). There exist three general categories of coping strategies: problem-focused, emotion-focused, and avoidance-based approaches (Tuncay & Musabak, 2015). Problem-focused coping strategies are aimed at doing something to alleviate the stressor and are generally used when individuals feel that their circumstance can be managed or altered in a positive way (Neff, Hsieh, & Dejitterat., 2005; Carver, Scheier, & Weintraub, 1989; Tuncay & Musabak, 2015). Problem-focused coping is considered to be the most psychologically adaptive of the three broad approaches and has been shown to lead to positive growth outcomes (Neff, Hsieh, & Dejitterat., 2005; Jurišová, 2016). Emotion-focused coping strategies are aimed at doing something to alleviate or manage the emotions associated with the stressor and may thus be adaptive when nothing can be done to change one’s circumstances (Neff, Hsieh, & Dejitterat., 2005; Carver, Scheier, & Weintraub, 1989). Avoidance-oriented coping strategies are aimed at avoiding the situation or feelings associated with the situation altogether and is generally seen as psychologically dysfunctional (Neff, Hsieh, & Dejitterat., 2005; Carver, Scheier, & Weintraub, 1989). In an academic context, emotion-focused coping might be useful when dealing with a current difficult grade, and problem-focused coping might be useful in order to change the outcome of the final grade (i.e., study harder for the next midterm). Studies have collected some evidence linking self-compassion with adaptive emotion-focused stress-regulation strategies, such as acceptance and positive reinterpretation/growth, and its negative association with avoidance-based stress-regulation strategies (Neff, Hsieh, & Dejitterat., 2005). One of the aims of the current study is to extend these findings by comparing students’ preferred coping
strategies used to deal with an unsatisfactory grade after a self-compassion versus mindfulness manipulation.

1.6 Self-Compassion May be More Predictive of Psychological Growth Outcomes than Mindfulness

While there is evidence to suggest that mindfulness is associated with psychological well-being in general (Klainin-Yobas et al., 2016; Baer et al., 2008), the evidence linking mindfulness with psychological growth specifically is scant. Moreover, the link between mindfulness and psychological well-being may be better explained by self-compassion. For instance, Harrington, Loffredo, and Perz (2014) proposed that insight may be the key mechanism whereby mindfulness may confer its benefits to psychological well-being. That is, acceptance of present-moment experiences may increase insight into how these experiences relate to one’s life, leading to psychological well-being. Similarly, Hanley & Garland (2017) found that self-concept clarity mediates the relationship between dispositional mindfulness and psychological well-being. However, it is a likely possibility that self-compassion may be facilitating this increase in insight into the self by providing individuals with the emotional support and comfort to approach difficult experiences.

Even with the little evidence available linking mindfulness and psychological growth, there is still reason to believe that self-compassion may actually be more important than mindfulness when it comes to growth-related outcomes. For instance, one study also found that the influence of mindfulness on growth was found to be largely through the use of cognitive emotion-regulation strategies, such as positive reappraisal, which has been consistently shown to be associated with self-compassion (Hanley, Garland, & Tedeschi., 2017; Neff, Hsieh, & Dejitterat., 2005). Another study found self-compassion, but not mindfulness, covared with
resilience and curiosity, both of which are related to psychological growth (Bluth & Eisenlohr-Moul, 2017). It is possible that being compassionate toward the self may reduce feelings of fear when faced with unfamiliar or challenging tasks, which may consequently increase motivation and likelihood of engaging in such tasks, ultimately leading to growth (Bluth & Eisenlohr-Moul, 2017).

Indeed, research hints at the potentially greater importance of self-compassion when it comes to outcome related to growth. One study found that self-compassion, but not mindfulness, was associated with reduced stress to a mindfulness intervention, which reinforces the importance of self-compassion specifically in times of distress (Bluth, Roberson, & Gaylord, 2015). Notably, Baer, Lykins, and Peters (2012) found that self-compassion was almost twice as strong a predictor of psychological well-being outcomes than mindfulness. The current study examines the degree to which this trend may apply more specifically to outcomes related to psychological growth.
Chapter 2: Proposed Research

2.1 Purpose

Research to date has only hinted at the relative roles of self-compassion and mindfulness in outcomes of psychological growth. The current study aims to tease apart the differential effects of mindfulness and self-compassion in psychological growth in order to determine if a self-compassion or mindfulness intervention would be more beneficial when growth is the desired outcome.

Previous studies have been limited in that they are cross-sectional, include only self-report measures, include mindfulness and self-compassion as part of a larger intervention (potentially diluting their specific effects on the outcome of interest), and put little emphasis, if any, on psychological distress (a necessary pre-condition for the implementation of self-compassion). The current studies aim to address these limitations by measuring growth-outcomes after implementing a reflection manipulation, including a behavioural component to measure growth, administering mindfulness and self-compassion manipulations that exist outside of a multifaceted intervention, and examining the constructs in the context of a distressing event, namely, receiving a dissatisfactory grade on a midterm.

2.2 Overview of Proposed Study

The primary goal of this study is to determine the degree to which groups exposed to a mindfulness or self-compassion manipulation, or to a journaling exercise void of any mindfulness or self-compassion instructions (control), will differ on outcomes related to psychological growth. Participants were recruited from the University of British Columbia Okanagan psychological research participant pool website (SONA) about a month into the first semester. Inclusion criteria required students to have received an unsatisfactory grade from a
recent midterm in any class they are currently enrolled in. Upon commencing the reflection manipulation, participants were randomized into one of three conditions: self-compassion, mindfulness, or control.

Prior to the in-person reflection component, participants completed an online survey that assessed baseline mindsets of psychological growth, including coping intentions, goal orientation, perceived competence in the course, and the degree to which they accept responsibility for their grade. Participants then completed the in-person portion of the study, where they were given reflection instructions that corresponded to their randomly assigned condition (i.e., self-compassion, mindfulness, or control). Students were then asked to complete the same measures of psychological growth mindsets immediately following the reflection manipulation. Non-growth mindsets were also included in the baseline and post-test questionnaires to differentiate growth-related outcomes from outcomes unrelated to growth.

In order to assess behavioural growth, participants were sent an email at the beginning of the following semester, which asked them to indicate the grade they received on the second midterm of the same course that they reflected on for the study. The difference between the first and second midterm grades was used as a behavioural indicator of effort to improve. This operational definition of self-improvement behaviour has been used previously (Breines & Chen, 2012). Though this difference in midterm mark could be attributed to many external factors (e.g., relative difficulty of midterms), random assignment to different experimental conditions was anticipated to alleviate the third variable problem to some extent.
2.3 Hypotheses

1. Participants in the self-compassion condition will report higher levels of self-reported self-compassion than the mindfulness or control conditions after the respective manipulations.

2. Participants in the self-compassion and mindfulness conditions will report higher levels of self-reported mindfulness than the control condition after the respective manipulations.

3. Participants in the self-compassion condition will write journaling entries that include more elements of ‘self-kindness’ and ‘common humanity’ than the mindfulness or control conditions, as evidenced by the coded journaling responses on the three facets of self-compassion.

4. Participants in the self-compassion and mindfulness condition will write journaling entries that include more elements of ‘mindfulness’ than the control condition, as evidenced by the coded journaling responses on the three facets of self-compassion.

5. Participants in the self-compassion condition will report higher levels of “Active” coping than the mindfulness or control conditions after the respective manipulations.

6. Participants in the self-compassion condition will report higher levels of “Planning” coping than the mindfulness or control conditions after the! respectively manipulations.

7. Participants in the self-compassion condition will report higher levels of “Positive Reinterpretation and Growth” (PRG) coping than the mindfulness or control conditions after the respective manipulations.

8. Participants in the self-compassion condition will report higher levels of “Mastery- Approach” goal orientation than the mindfulness or control conditions after the respective manipulations.
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9. Participants in the self-compassion condition will report higher levels of “Mastery-Avoidance” goal orientation than the mindfulness or control conditions after the respective manipulations.

10. Participants in the self-compassion condition will report higher levels of perceived competence than the mindfulness or control conditions after the respective manipulations.

11. Participants in the self-compassion condition will report higher levels of attributing the cause of the event to “something I did” than the mindfulness or control conditions after the respective manipulations.

12. Participants in the self-compassion condition will report higher accepting fault associated with the poor midterm mark than the mindfulness or control conditions after the respective manipulations.

13. Participants in the self-compassion condition, compared to participants in the mindfulness or control conditions, would report higher levels of behavioural growth; specifically, a greater increase in mark as a percentage from midterm 1 to midterm 2.

2.4 Exploratory Hypotheses

1. The present study will examine whether positive affect, negative affect, and stress will change from baseline to post-test.

2. The present study will examine whether baseline self-compassion and mindfulness is correlated with changes in outcome variables from baseline to post-test.

3. The present study will examine whether personality is correlated with changes in the outcome variables from baseline to post-test.

4. The present study will examine whether word count in reflection entries is correlated with changes in the outcome variables from baseline to post-test.
Chapter 3: Methodology

3.1 Participants

Participants were undergraduate students currently taking the Introduction to Psychology course, recruited through the University of British Columbia Okanagan psychological research participant pool website (SONA). Upon completion of the study, participants received 1.5% course credit for their psychology class. Inclusion criteria include students who have completed and received the grade from at least one midterm, that they are dissatisfied with this grade or feel they did not do as well as they feel they are capable of and will write a second exam in the same course. There were no specific percentage cut-offs for a dissatisfying mark, as the subjective experience of poor performance was thought to be more indicative of one’s experience of distress than an objective marker (e.g., a failing grade). Inclusion criteria also requires students to have access to a laptop or tablet with internet access that they may bring into the lab for the second component of the study. The third part of the study (i.e., reporting one’s second midterm mark) was not included as a component on SONA to ensure that students could still participate in part three past the closing date for SONA (November 28th); thus, part three was voluntary.

3.2 Measures

3.2.1 Initial Survey. As part of the initial survey, students were asked to create a participant code and enter in their email address in order to keep track of participants across time. Students reported their year of study, the number of days it has been since receiving their exam mark, the mark they received on the midterm as a percentage, the date of their next exam in the course, as well as how satisfied they are with the mark by indicating the extent to which “I received the mark I want” and “I consider this mark to be a failure” on a 7-point Likert scale from 1 = “Strongly Disagree” to 7 = “Strongly Agree”, with the first question reverse coded.
This mark satisfaction measure was taken from Neff and colleagues (2005). They also answered a question referring to their academic orientation, where they indicated the extent to which “Doing well in this class is important to me” on a 7-point Likert scale from 1 = “Strongly Disagree” to 7 = “Strongly Agree”. Finally, students entered the date of their second exam in the class.

Students completed measures of positive and negative affect, stress, personality, self-compassion, and mindfulness, as well as four measures of psychological growth/non-growth. All of these measures, excluding the measure of personality, were measured again after the reflection exercise.

Positive and negative affect. The Scale of Positive and Negative Experience (SPANE; Diener et al., 2010) was used in order to determine one’s experience of positive and negative feelings before and after completed the journaling exercise. This measure was administered as a secondary outcome measure in order to determine if the reflection exercise had any effect on one’s currently experienced positive or negative emotions. The SPANE is a 12-item scale with 6 items that assess positive feelings and 6 items that assess negative feelings. The SPANE was modified to reflect intensity versus frequency for the purposes of this study. Thus, participants indicated the degree to which they currently feel each of the emotion-laden words from 1 = “Very Slightly or Not at All” to 5 = “Extremely”. The subscales have demonstrated good alpha reliabilities (mean $\alpha = .86$) and moderately high temporal stability (Diener et al., 2010). The SPANE also correlates with other scales of feelings, including the PANAS, thus demonstrating convergent validity (Diener et al., 2010).

Stress. Students reported the level of stress they feel when thinking about their exam using a Visual Analogue Scale (VAS). The Stress VAS was administered as a secondary
measure in order to determine if the reflection exercises had any influence on participants’ levels of currently felt stress toward their exam marks. The Stress VAS demonstrates good correlations with other tools used to measure stress, good sensitivity for acute events, and correlates well with physiological stress markers (e.g., heart rate, blood pressure, and salivary cortisol levels; Lesage, Berjot, & Deschamps, 2012). It has also been found to have adequate discriminative sensitivity (ability to detect differences in stress levels between groups) and inter-concept validity (relationship the Stress VAS measures of stress and measures of different but similar concepts; Lesage, Berjot, & Deschamps, 2012). The Stress VAS consists of an unmarked ruler with endpoints labelled ‘none’ and ‘as bad as it could be’. Instructions were as follows: “Please indicate the level of stress you feel toward your exam RIGHT NOW using the slider bar on the small ruler”. Participants were to slide the bar to the point of the ruler that most represents the level of stress they currently have toward their exam.

Personality. The Big Five Inventory (BFI; John & Srivastava, 1999) was used to measure the five factors of personality, namely Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness. Personality was included in the baseline survey so that it could be analyzed as a moderator variable in order to determine if the reflection exercise worked better for those higher on certain factors of personality. The BFI is a 44-item measure, with each item containing a statement. Participants were required to indicate the extent to which they agree or disagree with each statement on a scale of 1 = “Disagree Strongly” to 5 = “Agree Strongly. The BFI has been shown to have adequate alpha reliabilities, ranging from .75 to .90 and averaging above .80 (John & Srivastava, 1999). Test-retest reliabilities are similarly high, ranging from .80 to .90 and averaging .85. The scale also demonstrates substantial convergent and divergent validity with other Big Five instruments and peer ratings.
Self-compassion. Baseline state self-compassion was measured with a modified version of the Self-Compassion Scale (SCS-Modified; Neff, 2003b). The SCS is a 26-item scale, with each item containing a statement related to one of the three facets of self-compassion: mindfulness, self-kindness, or common humanity. The items were modified in order to evaluate state self-compassion for the purposes of this study. The measure was also modified to reflect level of agreement rather than frequency. Thus, participants indicated the extent to which they agreed with each statement on a scale of 1 = “Strongly Disagree” to 7 = “Strongly Agree”. Neff (2003b) found that this scale as a whole has good test-retest reliability, with an overall score of .93. Additionally, the scale was found to have a good factor structure and correlated with selected measured in the predicted directions (Neff, 2003b). This scale achieved an alpha reliability of .88 at baseline and .92 at post-test for the current sample.

Mindfulness. Baseline state mindfulness was assessed using the State Mindfulness Scale (SMS; Tanay & Bernstein, 2013). The SMS is a 21-item scale, with each item containing a statement related to either mindfulness of the mind (e.g., “I noticed pleasant and unpleasant emotions”) or mindfulness of the body (e.g., “I noticed physical sensations come and go”). Students were asked to indicate the extent to which they agree with each statement when they had last thought about their midterm exam. Like the SCS, participants indicated the degree to which they agree with each statement on a scale of 1 = “Strongly Disagree” to 7 = “Strongly Agree”. The SMS has demonstrated good convergent, discriminant, and incremental convergent validity with respect to other measures of state and trait mindfulness (Tamay & Bernstein, 2013). Additionally, the SMS has demonstrated adequate test-retest reliability, construct validity, incremental validity, and predictive criterion-related validity (Tamay & Bernstein, 2013). This scale achieved an alpha reliability of .95 at baseline and .93 at post-test for the current sample.
3.2.2 Psychological Growth. Participants were asked to complete measures that indirectly assess psychological growth. Since the stressful or negative experience in this study is academic failure, growth was measured using indices that relate to one’s potential for thriving or success in an academic environment, as well as through a direct measure of one’s self-improvement behaviour (i.e., improvement in midterm grades). Though there exist specific measures of growth (e.g., the Stress-Related Growth Scale (SRGS; Park, Cohen, & Murch, 1996); the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996)), these assess long-term positive outcomes that extend to multiple and rather broad areas in life (e.g., social, religious, cognitive), and are thus not appropriate to assess the type of changes in mindsets that might be expected to change after having experienced a poor midterm mark. Thus, the self-reported outcome measures included here were made to reflect changes in one’s mindset that may eventually lead to growth, especially as it pertains to one’s success in academia. Non-growth measures were also included in the analyses in order to differentiate growth-related outcomes from outcomes unrelated to growth. Students were also asked to report their dissatisfying midterm mark as a percentage, as well as their second midterm mark in the same course. The difference between the two marks was used as a behavioural index of growth; that is, a measure of effort to improve in the course.

Coping with Failure. In order to realize personal growth after a stressful event, one must implement adaptive coping strategies (Tuncay & Musabak, 2015). A modified version of the COPE scale (Carver, Scheier, & Weintraub, 1989) was thus used to measure the strategies that students decide to implement in order to deal with their academic failure. The scale is modified in that it will refer to intended coping strategies, as opposed to coping strategies that they have already implemented. Only subscales that have been cited in the literature as being relevant to
outcomes of growth and make sense as an outcome measure in this study were used. Each subscale contains four items and responses were given on a 4-point Likert scale from 1 = “I won’t do this at all” to 4 = “I will do this a lot”. The subscales are classified into problem-focused, emotion-focused, and avoidance-oriented coping strategies (Zeidner, 1995). Carver, Scheier, & Weintraub (1989) report alpha reliabilities above .6 for most scales. Test-retest reliabilities were also somewhat high, with a mean of .62 in the smaller sample and .66 in the larger sample. Alpha reliabilities were above .66 for all of the subscales in the current study, both at baseline and at post-test. The COPE scales have also been found to correlate with selected personality measures in the predicted direction, suggesting convergent and discriminant validity.

The subscales used to assess problem-focusing coping strategies are:

- **Active coping**: exerting effort to alleviate the stressor or minimize its negative effects;
- **Planning**: coming up with action strategies on how to best handle the problem.

Problem-focused coping strategies are generally considered to be approach-oriented, which has been linked with positive outcomes including growth and, indeed, past research has established a link between these two forms of problem-focused coping and post-traumatic growth (PTG; Tuncay & Musabak, 2015; Jurišová, 2016).

The subscales used to assess emotion-focused coping strategies are:

- **Positive reinterpretation and growth**: reinterpreting the situation in a positive light;
- **Acceptance**: accepting the reality of the situation.

Though both of these emotion-focused coping strategies have been found to be associated with both cognitive, affective, and social forms of growth, positive reinterpretation tends to be more highly correlated with growth outcomes (Vaughn, Roesch, & Aldridge, 2009).
Authors speculate that this may be because it is a more active form of coping than acceptance.

The subscale used to assess avoidance-oriented coping strategies includes:

- **Denial**: ignoring the stressful situation or denying the reality of the event.

Denying the impact of a stressful event should only minimize the negative feelings associated with the event and should have no impact on growth because negative feelings are not acknowledged (Vaughn, Roesch, & Aldridge, 2009). Because both self-compassion and mindfulness involve being open and accepting of one’s experience, it was expected that both conditions will have similar levels of denial, and lower levels compared to the control group.

**Goal Orientation.** Mastery-based goals, versus performance-based goals, have been associated with a propensity toward challenge-seeking and are thus likely to lead to learning goals that ultimately foster academic growth (Deci & Ryan, 2000; Ames & Archer, 1988). The Achievement Goal Questionnaire-Revised (AGQ-R; Elliot & Murayama, 2008) is used to assess students’ propensity toward mastery- versus performance-based goals after having completed the reflection exercise. The scale is modified to reflect intended goal orientation rather than the goal orientation that one has had in the course up until this point. The AGQ-R is a 12-item scale used to assess orientation toward mastery-approach goals (e.g., “My aim will be to completely master the material presented in this class”), mastery-avoidance goals (e.g., “My aim will be to avoid learning less than I possibly could”), performance-approach goals (e.g., “My aim will be to perform well relative to other students”), and performance-avoidance goals (e.g., “My aim will be to avoid doing worse than other students”). Students were asked to indicate the extent to which each item is true of them from 1 = “Not at all” to 7 = “Very true of me”. The scales have been found to have alpha reliabilities of at least .84 (Elliot & Murayama, 2008) and most
subscales were found to have alpha reliabilities of at least .70 in the current study. All measurement items have been found to load maximally on their primary factor, with minimal loadings on the secondary factor, which shows that all four subscales are internally consistent (Elliot & Murayama, 2008). The subscales have also been found to correlate with criterion indices in the predicted direction, demonstrating convergent and discriminant validity (Elliot & Murayama, 2008).

*Perceived Competence.* As mentioned, greater perceived competence has been linked with both curiosity and exploration and has been theorised as being essential to ongoing psychological growth (Deci & Ryan, 2000; Searle, Neville, & Waylen, 2017). Thus, the Perceived Competence for Learning Scale (Williams & Deci, 1996) was used to assess feelings of competency, specifically as it relates to one’s ability to succeed in the course, as another indicator of psychological growth. The scale includes four items and students rated each item on a 7-point scale from 1 = “Not at all true” to 7 = “Very true”. Alpha reliability was .919 at baseline and .902 at post-test in the current study.

*Acceptance of Responsibility.* The more open and accepting of difficult experiences, the more insight we are likely to have into thoughts and behaviours, creating greater opportunity for growth to occur (Leary et al., 2007). Thus, the degree to which students’ accepted responsibility for their unsatisfactory grade was used as another indicator for psychological growth. It was expected that participants that accept greater responsibility for their dissatisfying grade will be more likely to change their behaviour in order to succeed in the course. In order to assess the degree to which students accepted responsibility for their poor grade, participants were asked to answer several questions. These questions were adopted from a study conducted by Leary et al. (2007). Participants rated the degree to which the poor grade was caused by (a) other people, (b)
something they did, (c) bad luck, (d) the kind of person they are (personality, abilities, attitudes, character, etc.). Higher endorsements of items that attribute the cause of the bad grade to oneself (i.e., something they did) indicate greater acceptance of responsibility. Attributing the cause of the event to “the kind of person I am” was not considered as a growth outcome, even though this item implies taking responsibility for one’s actions. This is because attributing the cause of the event to something that is relatively stable within oneself leaves little room for positive change to occur. Participants were also asked to indicate the extent to which the event was their fault, which was also indicative of greater acceptance of responsibility (Leary et al., 2007). Each item was answered on a scale ranging from 1 = “not at all” to 5 = “completely”.

**Behavioural Growth.** Improvement in students’ marks from midterm 1 to midterm 2 was used as a behavioural indicator of growth. It was assumed that a greater improvement (or a lesser decline) was indicative of how much effort students put into the course after having received a dissatisfying mark in the course. Thus, in addition to reporting their initial dissatisfying midterm mark, students who volunteered for part 3 of the study were sent an email 1-2 months after they completed part two to report a second midterm mark that they received in the same course.

**3.2.3 Manipulation Checks.** The same self-compassion and mindfulness measures used in the initial survey (i.e., M-SCS and M-SMS, respectively) were re-administered to check for the efficacy of the reflection manipulation. In order to determine how much participants’ journaling responses contained the three elements of self-compassion (i.e., self-kindness, mindfulness, and common humanity), journaling responses were coded on each of the three facets; responses were given a score for each facet, indicating how much the response contained the particular element in question: 0 (not at all), 1 (a little bit), 2 (moderately) or 3 (very much).
3.2.4 Main Outcomes. Participants completed the same four measures assessed at baseline that indirectly assess psychological growth, as well as the non-growth variables (i.e., COPE scale, AGQ-R, Perceived Competence for Learning Scale, and the four items used to assess acceptance of responsibility).

Growth-Related Variables. The following is a list of the scales and subscales indicative of mindsets related to psychological growth:

- COPE Scale:
  - Active coping
  - Planning
  - Positive reinterpretation and growth (PRG)
- Achievement Goal Questionnaire-Revised (AGQ-R)
  - Mastery-approach goals
  - Mastery-avoidance goals
- Competence for Learning Scale
- High Acceptance of Responsibility:
  - Attributing the cause of the event to “something I did”
  - Accepting fault for the event
- Improvement in Mark from Midterm 1 to Midterm 2

Non-Growth-Related Variables. The following is a list of scales and subscales that are not indicative of mindsets related to growth:

- COPE Scale
  - Acceptance
  - Denial
• Achievement Goal Questionnaire-Revised (AGQ-R)
  o Performance-approach goals
  o Performance-avoidance goals
• Low Acceptance of Responsibility
  o Attributing the cause of the event to “bad luck” and/or “others” – denying one’s own participation in the event.
  o Attributing the cause of the event to “the person I am” – overidentifying with the experiencing, making potentially unhealthy overgeneralizations.

3.2.5 Secondary Outcomes. Stress, as well as positive and negative affect, were both considered secondary outcome measures. They were both measured again after the reflection using the same measure that was used in the initial survey.

3.3 Procedure

Undergraduate students in their first year of study were recruited through the University of British Columbia Okanagan psychological research participant pool website (SONA). They were recruited approximately one month into the fall semester, around the time that the first round of midterms finished up. Inclusion criteria required that students have taken and received the grade from at least one midterm in the current semester that they are dissatisfied with or feel they could have done better on than they did, that they are at least moderately academically oriented, and that they have a second exam that they know they will write in the same course. Inclusion criteria also required students to have access to a laptop or tablet with internet access that they may bring into the lab for part two. Students did not receive course credits for part three of the study to ensure that students can still participate in part three past the closing date for SONA (November 28th); part three was therefore considered voluntary. Students signed up for
part one (i.e., baseline survey) and part two (i.e., the in-person session) on SONA. Students that signed up for part one of the study were asked to complete the baseline survey link attached to SONA. Upon accessing the survey link, participants were led to the consent form. If participants consented to participate in the study, they were directed to the initial survey. The initial survey was completed prior to coming in for the in-person session. Before starting the survey, participants were prompted to enter a unique identifying number and to provide an email that they would like to be contacted at. As part of the initial survey, participants were asked to report their year of study, the mark they received on their exam as a percentage, the number of days that have passed since receiving the mark, and the date of their next exam in that class (see Appendix C). They will also answer questions about how satisfied they are with their mark (Appendix C), their academic orientation (Appendix C), and will complete measures of personality, positive and negative affect, stress, and state self-compassion and mindfulness (see Appendix D). Finally, participants will complete four measures that will assess their tendency toward growth-related mindsets, including how they intend to cope, goal orientation, perceived competence, and academic responsibility (see Appendix D). Upon commencing the in-person sessions, participants were randomly assigned to one of three conditions: self-compassion, mindfulness, or control. Students did not know which group they had been randomized into prior to beginning the study.

The in-person group sessions took approximately 1 hour from start to finish. Once students arrived for their in-person session, they were directed to a computer and the research assistant explained and discuss important details of the consent form. Participants were prompted with a question asking them if they would like to participate in part three of the study. Participants were then be asked to follow the instructions on the screen to complete the reflection
exercise. The instructions that students received for the reflection differed based on the condition they were randomized into: self-compassion, mindfulness, or control. Each journaling exercise contained written instructions that were specific to the participants’ assigned condition (see Appendix E). In order to increase engagement with the exercise, each condition received information about the benefits of journaling, and explained condition-relevant concepts such as self-compassion and mindfulness. Students were also given an example of a reflection with the condition-specific prompts and were encouraged to reference the example to help them with their own reflection.

The self-compassion reflection instructions were created to reflect the three facets of self-compassion (self-kindness, mindfulness, and common-humanity) and were adapted from Dr. Kristin Neff’s self-compassion website (self-compassion.org; Neff, 2017). The self-compassion condition prompted individuals to “Briefly describe the event”. Then, instructions prompted students to reflect on their midterm mark using facets of mindfulness “Bring awareness to the painful emotions that are arising. Write about how you felt: sad, ashamed, frightened, stressed, etc. As you write, try to be accepting and non-judgmental of your experience, not belittling it nor making it overly dramatic”, common-humanity “Write down the ways in which your experience was connected to the larger human experience. This might include acknowledging that being human means being imperfect, and that all people have these sorts of painful experiences. You might also want to think about the various causes and conditions underlying the painful event”, and self-kindness “Write yourself some kind, understanding, words of comfort. Let yourself know that you care about yourself, adopting a gentle, reassuring tone”. A self-compassion manipulation similar to this have been successful in producing changes in outcome variables in the predicted directions (Leary et al., 2007; Seekis, Bradley, & Duffy, 2017).
The mindfulness reflection instructions were the same as the self-compassion manipulation but focused exclusively on the mindfulness component (see Appendix E). Specifically, students were prompted to “Briefly describe the event”, and then to reflect on their midterm using the same mindfulness prompt that was used in the self-compassion condition: “Bring awareness to the painful emotions that are arising. Write about how you felt: sad, ashamed, frightened, stressed, etc. As you write, try to be accepting and non-judgmental of your experience, not belittling it nor making it overly dramatic”. To my knowledge, previous research has not yet implemented a mindfulness journaling exercise to induce mindfulness. However, brief mindfulness inductions using similar methods (e.g. breathing exercises) have been successful in producing changes in certain outcome variables in the predicted directions (Arch & Craske, 2006). The control condition was included to control for any effects that disclosure and cognitive processing may have on outcome measures.

The control instructions were adapted from the study done by Ullrich & Lutgendorf (2002; see Appendix E). Like the other two conditions, students were prompted to “Briefly describe the event”. Then, students were prompted to reflect on their midterm mark by answering the questions: “How have you tried to make sense of the situation?” and “What do you tell yourself to help yourself deal with it?”. Similar control conditions have also been used in previous studies (Leary et al., 2007; Seekis, Bradley, & Duffy, 2017). Participants in all three conditions were informed that their responses would be anonymous.

After the reflection exercise, participants completed a state mindfulness and self-compassion survey, a measure of positive and negative affect, and stress. Participants were then prompted complete the same four surveys that assess their tendency toward growth, as well as non-growth, mindsets after having completed the reflection exercise. The surveys administered
in the in-person session were all the same ones that were administered in the initial survey. Participants in each condition were guided to respond to each of these items while thinking about their academic failure after having done the reflection exercise. After finished with the online questionnaire, students were reminded that if they chose to participate in the third part of the study, that they would be receiving an email from the researcher in around 2 months or at the end of the semester (December – January) that include a question about their academic experience. Students will be thanked for their time. Students who agreed to participate in part three of the study were contacted at the beginning of January by email containing a survey asking them to report their mark as a percentage on their second exam, as well as the number of days that have passed between completing the reflection exercise and writing their second exam. Participants received 1.5% SONA credits after completion of part one and two of the study.

3.4 Statistical Programs

SPSS v. 25.0.0.0 and G*Power v. 3.1.9.4 were used to conduct the analyses.

3.5 Sample Size

Using G*power, an analysis was done to determine the sample size needed to detect significant effects with a medium effect size across groups, controlling for pre-intervention scores. Specifically, the following parameters were used: F-tests; ANCOVA with fixed effects, main effects, and interactions; effect size $f = 0.25$ (medium); $\alpha$ error probability = .05; power (1 - $\beta$ error probability) = .80; numerator degrees of freedom = 1; number of groups = 3; number of covariates = 1 (i.e., pre-intervention score). The analysis suggests a total sample size of 158 participants. A medium effect size can be reasonably expected given prior research comparing mindfulness, self-compassion, and control groups on well-being outcomes (Neff & Germer, 2013; Schuling et al., 2017). In case of a significant ANCOVA, an additional power analysis was
conducted to determine how many participants would be required to detect differences between two groups (i.e., post-hoc t-tests). To detect mean differences between groups with a significance level of $p = .05$ and a power of .80, a sample size of 193 (64 participants in each condition) is required to detect a medium effect size of .25. Therefore, based on these analyses, a sample size of 193 participants was sought.

A total of 261 undergraduates participated in the study. Data from 41 of the participants were excluded in the analyses because they were blank or failed to complete one or more measures. An additional 42 responses were excluded because participants either failed to complete part one or two of the study. Lastly, 4 participants’ responses were excluded because, upon coding, it was found that they failed to follow the reflection instructions for the journaling exercise. Therefore, the final data set on which the analyses were performed was 174 (self-compassion condition, $n = 55$; mindfulness condition, $n = 59$; control condition, $n = 60$). Mean year of study was 2.45 (first year to fifth year; 43 in first year; 49 in second year; 47 in third year; 31 in fourth year; and 4 in fifth year). Mean mark received as a percentage was 67.66 (range = 25-91). Unfortunately, only 4 participants completed part three of the study (i.e., reporting of second midterm mark). Thus, there was insufficient data to reliably analyze the extent to which individuals’ midterm marks improved after the manipulation, or if differences existed across the conditions. Thus, change in midterm marks was omitted from the analyses and will not be mentioned further.
Chapter 4: Results

4.1 Analytic Methodology

4.1.1 Data Cleaning and Calculation of Variable Scores. Missing values were treated with listwise deletion (omitted in the computation - the default option in SPSS). Variable scores were calculated as per scale protocol. Initial descriptive statistics were conducted to examine pre- and post-intervention variable means and standard deviations, as well as change scores, across the three different conditions (i.e., self-compassion, mindfulness, and control). Pearson correlations, scale alpha reliabilities, and aggregate mean and standard deviations for the total sample for both pre- and post-intervention scores, as well as skew, kurtosis, and Shapiro-Wilk values for the post-intervention measures, were also included in the analyses.

4.1.2 T-tests. A series of t tests were conducted in order to determine if there were significant pre/post changes in study variables in each of the three conditions, including self-compassion and mindfulness scores, stress, positive and negative affect, and the various growth and non-growth outcomes.

4.1.3 ANCOVA. An ANCOVA was used to determine if there were differences between the three experimental conditions on each of the primary and secondary outcome variables, controlling for baseline values (Field, 2012). An interval scale was used for the dependent variables in this study, which is accepted in an ANCOVA. The F-test used in an ANCOVA carries a few assumptions, which were taken into consideration during the implementation of the study:

*Normally distributed data.* The Shapiro-Wilk test was conducted to determine if the scores in the sample significantly deviated from normality (see Table 4.1). Although most of the variables used in the analyses deviated from a normally distributed curve (i.e., significant
Shapiro-Wilk value), there was roughly equal number of participants in each group, which makes the F-test robust despite violation of this assumption.

_Homogeneity of variance_. Levene’s test was conducted to determine if the variances of the outcome variables were equal across all three conditions in the current study. Most of the variables used in the analyses had equal variances across groups, though a few variables showed significantly different variances across groups. Nonetheless, similar to the violations of normally distributed data, the F-test is also robust despite violation of the assumption of homogeneity of variance when there are a roughly equal number of participants in each group. Thus, ANCOVA was still considered appropriate for analyzing the current data, despite violations to these two assumptions.

_Independent observations_. The assumption of independent observations is the assumption that observations across groups are not correlated nor dependent. This is typically a problem when participants discuss the experiment, thus influencing each other’s scores. In the current study, participants were assigned to one of three groups and were asked to work on the post-test survey silently with a supervising research assistant. It is therefore unlikely that participants influenced each other scores, and observations across groups are thus unlikely to be dependent.

_Independence of the covariate and treatment effect_. The assumption of independence of the covariate and the treatment effect is the assumption that the growth and non-growth variable scores obtained at baseline are independent of the treatment effect (i.e., self-compassion, mindfulness, and control conditions). In order to reduce the likelihood of violating this assumption, groups were randomly assigned to the treatment groups. Further, post-hoc ANOVAs revealed no significant differences across groups on the pre-intervention growth and non-growth variable scores.
Homogeneity of regression slopes. The homogeneity of regression slopes is the assumption that the regression slopes for the covariates (i.e., pre-intervention scores) to the dependent variable (i.e., post-growth scores) are equal across conditions. Three of the outcome variables violated this assumption: “denial” coping, attributing the cause of the event to “something I did”, and attributing the cause of the event to “bad luck”. Therefore, in addition to running an ANCOVA, change-scores ANOVAs and multilevel modeling growth curve analyses were run because they do not depend on the assumption of homogeneity of regression slopes.

4.1.4 Change Scores ANOVA. ANOVAs were performed on the change scores of the self-compassion and mindfulness variables, the growth-related variables, and the non-growth-related variables to determine if there exist any differences between groups in the amount that they changed on these variables from baseline to post-test. Change scores were calculated for each variable by subtracting the baseline from the post-test scores. ANOVA carries all of the assumptions of a parametric test. That is, the assumption of normality, homogeneity of variances, independent observations, and dependent variable measured on at least an interval scale, which were all addressed above.

4.1.5 Moderation Analyses. To begin to explore the moderating effect of personality on the relationship between the manipulation and growth, each of the 5 personality factors were correlated with changes in self-reported self-compassion and mindfulness (Table 4.14), growth-variables (Table 4.15), and non-growth variables (see Table 4.16). ANCOVA was then performed on significant correlations to see if including the personality factor as a covariate would alter the relationship between condition and post-growth variables. Because none adding in personality factors to the ANCOVA did not alter the relationship between condition and post-growth variables, no further moderation analyses were performed.
**4.1.6 Coding.** To determine if participants followed the journaling instructions corresponding to their assigned condition, journaling responses were coded on the three facets of self-compassion described earlier: self-kindness, mindfulness, and common humanity. Responses for each part of the journaling exercise was amalgamated into one complete journaling response, such that coders would not see the group-specific journaling instructions. Responses were given a score on each of the three facets, indicating whether the response contained the specific element in question: 0 (not at all), 1 (a little bit), 2 (moderately) or 3 (very much). Three coders coded each of the responses for 178 participants. Each of the coders received a copy of the definitions of the three elements used in the study, a copy of the instructions for each of the elements used in the self-compassion condition, examples of a 0-point, 1-point, 2-point, and 3-point response for each of the three elements, and made-up reflections that were worked through together until each of the criteria were understood by all of the coders.

**4.1.7 Word Count Analyses.** To determine whether or not the amount that people wrote influenced the extent to which individuals changed from baseline to post-test on each of the variables, word count (i.e., the total amount of words participants wrote in their reflection) was correlated with change scores of the self-compassion and mindfulness variables (Table 4.17), the growth variables (Table 4.18), and the non-growth variables (Table 4.19). Results were also separated by condition (see Table 4.20 – 4.22).

**4.2 Manipulation Checks**

**4.2.1 Self-Report Measures.** To determine if the intervention worked to increase self-compassion and mindfulness, values for the Modified Self-Compassion Scale (M-SCS; Neff,
2003b) and Modified State Mindfulness Scale (M-SMS; Tanay & Bernstein, 2013) were compared from baseline to post-test.

*Self-compassion:* Across all three groups, self-compassion significantly increased from pre- to post-intervention (refer to Table 4.2). Most notably, however, there was a significant difference between groups in their level of post-intervention self-compassion scores, controlling for baseline levels of self-compassion (see Table 4.3). This significant difference in reported levels of self-compassion across groups was confirmed when running an ANOVA on the change scores from baseline to post-test. More specifically, the self-compassion group showed significantly greater scores of self-compassion than the mindfulness group (see Table 4.4). The self-compassion group also had greater self-compassion scores than the control group, though it did not reach the traditional level of statistical significance when using post-hoc tests from the ANCOVA procedure; this difference was significant, though, when using post-hoc tests from the ANOVA procedure. The mindfulness and control groups did not differ significantly on self-reported self-compassion scores.

*Mindfulness:* Mindfulness did not significantly change from pre- to post-intervention in any of the groups (Table 4.2). Moreover, there was no significant difference between groups on self-reported mindfulness, controlling for pre-intervention mindfulness scores, nor was there a difference across groups in changes in mindfulness from baseline to post-test (Table 4.3).

Overall, these results demonstrate that the self-compassion manipulation worked to increase self-reported self-compassion to a greater extent in the self-compassion condition than the mindfulness or control conditions. The mindfulness manipulation, however, was not successful in increasing self-reported mindfulness in any of the groups. That mindfulness did not increase from baseline to post-test in the mindfulness condition specifically makes it difficult to
draw any meaningful conclusions from this group. Indeed, since self-reported mindfulness did not significantly change from baseline in the control condition either, the mindfulness condition may be considered on par with the control group in this regard. In order to be more confident in the effect of mindfulness on outcomes of growth, it would be necessary to observe significant changes in mindfulness from baseline to post-test. Thus, results from the current analysis comparing the results from the self-compassion and mindfulness conditions should be interpreted with extreme caution, as the mindfulness condition may be more accurately considered as another control condition.

4.2.2 Coded Journaling Responses.

4 of the responses contained reflections that deviated from the reflection instructions and were therefore removed from the analyses; therefore, all analyses were performed on 174 participants. A high degree of inter-rater reliability was found when values were averaged across the 3 elements of self-compassion for each participant. ICC was used to indicate the extent to which responses resembled each other across the different raters. The average measure ICC was .929 with a 95% confidence interval from .908 to .945, $F(173, 346) = 14.051, p < .001$. Inter-rater reliability was also found across the values for the element of mindfulness (ICC = .824, 95% CI [.773, .865], $F(173, 346) = 5.685, p < .001$), the element of self-kindness (ICC = .859, 95% CI [.818, .892], $F(173, 346) = 7.076, p < .001$), and the element of common-humanity (ICC = .936, 95% CI [.917, .951], $F(173, 346) = 15.594, p < .001$). Given the high degree of interrater reliability, as well as the practice beforehand, the coding should represent both valid and reliable data.

Mindfulness Coding Scores. The mean mindfulness coding score was 2.19 for the self-compassion group, 1.81 for the mindfulness group, and .96 for the control group (see Table 4.5).
A one-way ANOVA revealed that groups were significantly different from each other on mindfulness coding, $F(2, 171) = 72.713, p < .001$, $\eta^2_p = .460$, with the self-compassion group being significantly greater than both the mindfulness group (mean difference = .380, $p < .01$) and the control group (mean difference = 1.238, $p < .001$). The mindfulness group was also received a significantly greater score of mindfulness than the control group (mean difference = .858, $p < .001$).

**Self-Kindness Coding Scores.** The mean self-kindness score was 2.34 for the self-compassion group, .67 for the mindfulness group, and 1.57 for the control group (see Table 4.5). A one-way ANOVA revealed significant differences between groups on ratings of self-kindness, $F(2, 171) = 73.660, p < .001$, $\eta^2_p = .463$, with the self-compassion group receiving a significantly greater score than both the mindfulness group (mean difference = 1.673, $p < .001$) and control group (mean difference = .773, $p < .001$). The control group also received a significantly greater score of self-kindness than the mindfulness group (mean difference = .900, $p < .001$).

**Common Humanity.** The mean common humanity score was 1.89 for the self-compassion group, .079 for the mindfulness group, and .34 for the control group (see Table 4.5). A one-way ANOVA revealed significant differences between groups in ratings of common humanity, $F(2, 171) = 126.174, p < .001$, $\eta^2_p = .596$, with the self-compassion group receiving a significantly greater score than both the mindfulness group (mean difference = 1.812, $p < .001$) and the control group (mean difference = 1.546, $p < .001$). Though the control group received a greater score of common humanity than the mindfulness group, the difference did not reach traditional levels of significance (mean difference = .265, $p = .072$).

Overall, these results demonstrate that the instructions in the self-compassion condition worked successfully to produce responses that contained the three elements of self-compassion.
(i.e., mindfulness, self-kindness, and common humanity) to a greater extent than the mindfulness and control conditions. Additionally, the mean score received for the self-compassion condition was approximately a 2 for each facet (i.e., moderately containing the element in question). Though these numbers suggest that there is room for improvement, it nonetheless indicates that those in the self-compassion condition were making efforts to exercise the three elements of self-compassion in their journal responses. As expected, the journaling instructions used in the mindfulness group worked to produce more mindful responses than those found in the control group. Unexpectedly, however, was that the control group tended to write journaling entries that contained more self-kindness and common humanity than the mindfulness group. It is possible that the open-ended nature of the prompts in the control condition could have led participants to spontaneously write more statements containing elements of self-kindness and common-humanity than the more directive and narrow instructions given in the mindfulness condition.

4.3 Did Groups Differ on Mark Dissatisfaction, Academic Orientation, or Days Since Receiving Midterm Mark?

An ANOVA was run to see if groups differed on the degree to which they were dissatisfied with their midterm mark, how academically oriented they were, and the number of days it had been since receiving their midterm mark, as differences in these variables could affect the outcome of the results. Groups did not significantly differ on mark dissatisfaction, $F(2, 171) = .459, p = .633, \eta_p^2 = .005$), nor did they differ on the number of days it had been since receiving their dissatisfying midterm mark, $F(2, 171) = .136, p = .873, \eta_p^2 = .002$. However, groups significantly differed in their relative academic orientation (i.e., how much doing well in the course is important to them), $F(2, 171) = 4.282, p < .05, \eta_p^2 = .05$. Post-hoc analyses revealed that the control group ($M = 6.02, SD = .813$) had a significantly lower academic
orientation than both the mindfulness group (M = 6.36, SD = .804; mean difference = .378, \( p < .05 \)) and the self-compassion group (M = 6.38, SD = .623; mean difference = 1.260, \( p < 0.05 \)).

The self-compassion and mindfulness groups did not differ in their reported levels of academic orientation (mean difference = .026, \( p = .982 \)). Though groups significantly differed on this variable, the means of all of the groups were all above 6.00, indicating that most individuals in all three groups agreed with the statement “Doing well in this class is important to me”; thus, all groups may be considered relatively high on academic orientation.

4.4 Were Students Stressed When Thinking About Their Midterm Mark?

As mentioned, distress is a necessary pre-condition for the implementation of self-compassion. Mean baseline levels of stress reported by students in each condition when thinking about their midterm mark did not exceed a score of 66 on a 100-point scale (see Table 4.6).

Though no a priori cut-off score was outlined for acceptable levels of stress, it is possible that the level of stress reported by students in the current study may not have been high enough for self-compassion to have meaningful effects. That said, because the stress measure used in the current study was a sliding scale (i.e., no names for points midway on the scale), it is hard to know exactly how students interpreted the numbers in this scale. Future studies may wish to implement a measure of stress that gives a clearer indication as to the level of distress students experienced as a result of their midterm mark. There were no significant differences in self-reported stress between groups at baseline (self-compassion condition \( M = 57.22 \), mindfulness \( M = 64.78 \), control \( M = 55.90 \), \( p > .05 \)).
4.5 Did Stress, Positive Affect, or Negative Affect Change After the Intervention?

To determine if the intervention had an impact on the secondary outcomes of stress, positive affect, or negative affect, values were compared from baseline to post-intervention. Stress and negative affect significantly decreased following the self-compassion, mindfulness, and control conditions (see Table 4.6 for mean difference, significance levels, and effect sizes). The self-compassion group and control group both reported significant increases in positive affect; the mindfulness group did not significantly change from pre- to post-intervention. Thus, regardless of instructions given in the current study, journaling about one’s dissatisfying midterm mark reduced self-reported stress and negative affect, and increased positive affect in two of the three conditions.

4.6 Correlations

A correlation matrix was run for all of the main variables for both baseline and post-intervention variables (see Table 4.7). Surprisingly, self-compassion was not significantly correlated with mindfulness, at either pre- or post-intervention. This is inconsistent with the vast amount of research reporting a large correlation between these two overlapping constructs (Iskender, 2009; Neff, Hsieh, & Dejitterat, 2005; William, Stark, & Foster, 2008; Breines & Chen, 2012; Leary et al., 2007). This unexpected result could be due to the state-like nature of the scales used in the current study, which runs in contrast to most other studies, which are often cross-sectional in design, that measure these two variables at the trait-level. Though these two constructs may be highly related when averaged across a span of time, it is possible that certain aspects of mindfulness and self-compassion may be difficult to experience simultaneously. For example, it may be difficult to “be kind to oneself” (item 19 of the Modified Self-Compassion
Scale) while simultaneously “paying attention to pleasant and unpleasant sensations” (item 2 of the Modified State Mindfulness Scale). This finding is important as it may lend support to the theoretical distinction between these two constructs, demonstrating that perhaps this distinction shows up even more at the state level.

Overall, though both self-compassion and mindfulness seem to be related to different growth-related variables, mindfulness seems to be more highly associated with growth variables than self-compassion in the current study, a finding that runs counter to the prediction that self-compassion would be more greatly associated with growth mindsets than mindfulness. Competence was the only growth-related variable that self-compassion was significantly positively correlated with, that mindfulness was not correlated with. Even at the level of correlations, this finding extends knowledge in this area because it distinguishes competence from other growth variables. Interestingly, while neither self-compassion nor mindfulness were correlated with ‘acceptance of responsibility’ growth variables (i.e., attributing the cause of one’s midterm mark to one’s actions and accepting the fault for one’s grade), self-compassion, but not mindfulness, was significantly negatively correlated with the variables that attributed the blame to causes other than oneself (i.e., attributing the cause of one’s midterm mark to ‘others’ and ‘bad luck’) or overidentifying with the bad mark (i.e., attributing the cause of the midterm mark to the ‘type of person I am’). This finding suggests that while self-compassion may not specifically be associated with growth-related cognitions, that perhaps self-compassion is more highly correlated with cognitions that may be antithetical to growth than mindfulness. This conclusion was also supported by the finding that self-compassion was significantly negatively correlated with denial (a non-growth coping variable), while mindfulness was significantly positively correlated with denial.
4.7 Did Growth Variables Change from Baseline to Post-Test?

To determine if growth occurred within each of the three conditions (i.e., self-compassion, mindfulness, and control), baseline values of growth variables were compared to post-manipulation values. As previously mentioned, increases in growth-related variables were expected to occur to the greatest extent in the self-compassion condition, and to a significantly lesser extent in the mindfulness and control conditions; this analysis would therefore provide evidence as to whether each intervention affected these growth-related outcome variables as anticipated.

Within the self-compassion group, there was a significant increase in the coping variable of “Positive Reinterpretation and Growth” (i.e., COPE-PRG) and a trend toward a significant increase in competence (i.e., PCLS) and attributing the cause of the incident to “Something I Did” (refer to Table 4.8). There was also a trend toward significance for the “Mastery-Avoidance” orientation toward goals, though this was in the negative direction (i.e., this growth-related variable decreased from pre- to post-intervention). Within the mindfulness group, there was a significant increase in the coping variables of “Planning” and “Positive Reinterpretation and Growth”, as well as in competence and attributing the cause of the incident to “Something I Did”. Within the control group, there was a significant increase in the “Planning” and “Positive Reinterpretation and Growth” coping, as well as competence.

The results suggest that although all three groups increased on at least one element of growth, the mindfulness and control group seemed to increase to a greater extent than the self-compassion group. Even so, the groups displayed a similar pattern of elevations, and the only variable that seemed to distinguish the groups was the ‘Planning’ variable, a finding I will return to in the discussion.
4.8 Was There a Significant Difference Between Groups on Growth Variables?

The main outcome of the study concerned whether scales measuring growth were greater after a self-compassion manipulation versus a mindfulness or control journaling manipulation. Analyses from the ANCOVA revealed no significant differences between groups on any of the growth variables, controlling for pre-intervention scores (see Table 4.9). However, because some variables violated the assumption of homogeneity of regression slopes, ANOVAs were also conducted on the change scores for each of the growth variables to determine if groups significantly differed in the amount that they changed in growth from baseline to post-test. Results from the ANOVAs were consistent with the ANCOVA; that is, there were no significant differences between groups in the amount that they changed in growth variables from baseline to post-test.

4.9 Were Growth Variables Distinguishable from Non-Growth Variables?

In addition to growth variables, non-growth variables were also included in the analyses to determine the specificity of the intervention on variables related to growth. Because these variables have not been shown to be related to growth, it was expected that groups would not change significantly from baseline to post-intervention, with the exception of “acceptance” coping, which was expected to increase to a similar extent in the self-compassion and mindfulness conditions. It was also expected that groups would not differ significantly from each other on these non-growth variables.

With the exception of “Acceptance” coping, the self-compassion manipulation did not significantly alter any of the non-growth variables (see Table 4.10). If the self-compassion condition were successful in increasing growth-variables, then this may suggest specificity of the manipulation to growth variables. However, the self-compassion condition was not successful in
increasing growth variables from baseline to post-test above and beyond the mindfulness or control conditions, and there were no significant differences between conditions on the growth variables (see Table 4.11); thus, there was not much evidence to suggest a discrimination between growth and non-growth variables.

4.10 Did the Manipulation Work Better for Those High or Low on Self-Compassion or Mindfulness?

There were no consistent patterns found between those who reported behind high in state mindfulness or self-compassion and changes in growth variables (see Table 4.12). Thus, there was no evidence to suggest that being higher in self-compassion or mindfulness dampened or facilitated growth.

4.11 Did the Manipulation Work Better for Those Who Reported Greater Changes in Self-Compassion or Mindfulness?

In general, there seems to be a pattern in the data that suggests that the greater increases one reported in mindfulness, the greater they also reported increasing in growth variables (see Table 4.13). The pattern was much less clear with in changes in self-compassion, where greater change was associated with greater increases in some variables, but lesser increases in others.

4.12 Did the Manipulation Work Better for Certain Personality Dimensions?

To determine whether or not personality influenced the extent to which individuals changed from baseline to post-test on each of the variables, the big five personality factors (i.e., extraversion, agreeableness, conscientiousness, neuroticism, and openness) were each correlated with change scores of the self-compassion and mindfulness variables (Table 4.14), the growth-variables (Table 4.15), and the non-growth variables (Table 4.16). Few variables were associated with a change in self-compassion and mindfulness, as well as growth and non-growth variables,
but there was no consistent pattern in the data. Adding personality factors that were significantly correlated with change in any variable as a covariate in an ANCOVA did not significantly alter the relationship between baseline and post-test levels of any of the variables.

4.13 Did the Manipulation Work Better If Participants Wrote More?

When conditions were considered together, word count was significantly correlated with a positive change in self-compassion and mindfulness (see Table 4.17), as well as with the growth variables of “positive reattribution and growth” (PRG) coping and attributing the cause of the poor grade to “something I did” (i.e., accepting responsibility; see Table 4.18); none of the non-growth variables were significantly correlated with word count (see Table 4.19). When the conditions are considered separately, the pattern of significance is less clear but, given the size of the correlations, this is likely due to reduced sample size compared to when conditions are considered all together (see Table 4.20 – 4.22).

An ANOVA revealed significant differences between groups on word count, $F(2, 173) = 17.058$, $p < .001$. Post-hoc tests revealed a significant difference between the self-compassion ($M = 265$, $SD = 113$) and mindfulness ($M = 155$, $SD = 84.86$) groups, with individuals in the self-compassion condition writing significantly more than individuals in the mindfulness condition, $p < .001$, 95% CI [65.248, 153.996]. There was also a significant difference between the self-compassion ($M = 265$, $SD = 113$) and control ($M = 208.57$, $SD = 101.45$) groups, with individuals in the self-compassion condition writing significantly more than individuals in the control condition, $p < .01$, 95% CI [11.911, 100.301]. Finally, there was a significant difference between the mindfulness ($M = 155$, $SD = 84.86$) and control ($M = 208.57$, $SD = 101.45$) conditions, with individuals in the control condition writing significantly more than individuals in the mindfulness condition, $p < .05$, 95% CI [-96.922, -10.109].
Overall, results suggest that the amount of words participants wrote in the reflection was significantly associated with changes in self-reported self-compassion and mindfulness and, to a lesser extent, changes in growth.

It was also true that the amount that participants wrote in their reflection depended on the reflection instructions they received, with individuals in the self-compassion condition writing more than those in the mindfulness and control conditions, and with those in the control condition writing more than the mindfulness condition. Indeed, instructions used in the self-compassion condition included more writing prompts than in the control condition, and the control condition included more writing prompts than the mindfulness condition. Thus, adding more prompts seems to be an efficient way of encouraging individuals to write more in a reflection manipulation.
Chapter 5: Discussion

The present research exposed students who had just received a dissatisfying midterm mark to a self-compassion, mindfulness, or control journaling exercise in order to delineate the relative contribution of self-compassion and mindfulness on outcomes related to psychological growth. In general, taking part in a brief self-compassion journaling exercise was successful at increasing self-reported levels of self-compassion compared to a brief mindfulness or control journaling exercise. Additionally, coding of the journaling responses show that the journaling instructions used in the self-compassion condition were successful at creating more self-compassionate responses than both the mindfulness or control reflection instructions, across all three facts of self-compassion (i.e., self-kindness, mindfulness, and common humanity). Despite the apparent success of increasing self-compassion in those partaking in a brief self-compassion journaling exercise, growth measures within this group did not increase to a significantly greater extent than in those taking part in a mindfulness or control journaling exercise. However, within each group, there were significant increases in the growth variable ‘positive reinterpretation and growth’ coping and trending toward significant increases in levels of perceived competence, as well as significant decreases in secondary variables of stress and negative affect. Additionally, unexpectedly, both the mindfulness group and control group decreased in the non-growth variable of ‘denial’ coping. Though there were no explicit hypotheses about the non-growth variables, decreases in denial may suggest that reflecting on a negative experience with a journaling exercise may help individuals acknowledge the reality of the situation, and may be the first step toward more proactive methods of coping.

Overall, results do not support the a priori hypothesis that individuals who reflect on a poor midterm grade using self-compassion will report greater growth than individuals using
mindfulness, specifically in the areas of problem-focused coping, mastery goals, competence, or accepting responsibility. More optimistically, however, these results demonstrate that reflecting on a negative experience with a journaling exercise, regardless of instructions given, reduced stress, decreased negative affect, and increased certain measures of growth. In fact, the effect sizes for the changes seen in these variables in the present study are much larger than what has been previously found in longer and more intense positive psychology interventions (see Sin & Lyubomirsky, 2009 and Bolier et al., 2013). Thus, while there were no clear differences between groups in the primary or secondary outcome variables, all three groups showed impressive improvements in overall emotional well-being and stress toward their poor midterm grade.

There are a few possibilities that may account for the nonsignificant between-group findings. First, it is possible that participants did not complete the reflection as per the reflection instructions. However, coding for the quality of responses on the three facets of self-compassion (i.e., self-kindness, mindfulness, and common-humanity) revealed that the self-compassion group had higher scores across all three facets of self-compassion than the other two conditions. Additionally, the 95% confidence interval for all three facets did not extend below 1.63 in this condition, which shows that majority of the reflections made by those who received self-compassion journaling instructions contained at least “a little bit” or “moderate” levels of the three facets of self-compassion. Further, though participants in the mindfulness condition did not report a greater change in state mindfulness compared to the control group, coding of the journaling responses revealed that participants in the mindfulness condition wrote responses that contained a greater amount of mindfulness than the control condition. Nonetheless, it could be that this was students’ first exposure to journaling. Thus, adding a training component at the
outset may have increased students’ ability to engage in the manipulation, above and beyond content of the reflections.

Another explanation that may account for the nonsignificant between-group differences is that the manipulation simply wasn’t strong enough. An effort was made to introduce relevant concepts in the corresponding conditions in order to increase buy-in and active participation from the participants. Participants in each condition also received an example to demonstrate how the elements in the respective conditions could be incorporated into a reflection. Participants were also prompted with specific instructions for each element in the corresponding manipulation so as to increase the probability that each element would be included in the reflection. Despite these efforts to engage participants in the reflection exercises, the journaling exercise was a one-shot manipulation that took about 15 minutes to complete, which may not have been enough to observe noticeable differences between groups, especially given the stability of the growth variables across time (Buško & Kulenović, 2003; Deci & Ryan, 2000). Additionally, though the current reflection manipulation extended on the methods used for inducing self-compassion from authors such as Breines & Chen (2012) and Leary et al. (2007) who were successful in increasing growth-related mindsets, the current study sought to detect differences between two very similar constructs (i.e., self-compassion and mindfulness), which were both compared against an active control. Thus, it could be that differences between groups were much more difficult to detect in the current study compared to existing research on self-compassion. Extending the length of the intervention might be necessary in detecting differences in outcomes related to growth across self-compassion and mindfulness manipulations.

Indeed, the control group was found to be undistinguishable from either experimental group on the main outcome variables. Because there is a clear link between self-compassion and
variables related to growth, the finding that self-compassion did not increase growth to a greater extent than the control group suggests that the manipulation was not strong enough. In order to be more confident in the distinction between self-compassion and mindfulness, therefore, it would be necessary to observe a clear distinction from the control group to the self-compassion group. Without this in place, nonsignificant differences between the self-compassion and mindfulness group could be attributed to relatively low strength of the manipulation. It may thus take long-term practice and overcoming habitual ways of responding to one’s negative experiences in order to develop a new way of relating with oneself. Additionally, since the growth variables used in the current study have shown a relatively high degree of trans-situational generality (i.e., used across many different situations), perhaps limiting the manipulation to a single event (a dissatisfying midterm grade) made it more difficult to detect significant differences in growth variables between groups (Ptacek et al., 2008). Responding with self-compassion might therefore need to be implemented for lengths of time and across many situations before noticeable changes in growth mindsets emerge.

That said, another reason for the apparent lack of differences between the self-compassion and control conditions could be that the control condition may have unintentionally fostered some aspects of self-compassion, given the open-ended nature of the reflection prompts and the aspects of self-kindness included in the control example reflection (though this was not the intention). Efforts should thus be made to create a more tightly controlled control condition, either by having participants write about something unrelated to the stressful event, or by asking more specific questions that reduce the likelihood for meaning making.

A third possibility is that assessing the growth outcomes immediately after the reflection manipulation did not allow sufficient time for the growth benefits to develop. While more state-
like variables such as stress, positive affect, and negative affect seemed to be receptive to changes across all three journaling exercises, it is possible, and very likely, that most, if not all, of the growth measures used in the current study are constructs that are typically learned over a period of time. For instance, only the mindfulness and control group significantly increased in their desire to come up with action strategies to handle the problem (i.e., ‘planning’ coping); the self-compassion group did not significantly change from baseline to post-intervention in this variable. Though this finding runs counter to the a priori hypothesis that the self-compassion group would experience greater increases in this growth-related variable, it is possible that writing about how suffering is a part of the larger human experience and extending warmth and kindness to oneself (i.e., engaging in self-kindness and common-humanity) might have given those in the self-compassion condition enough temporary relief from the distressing grade, and comfort with where they are at, without feeling the need to take immediate action to improve on oneself. It could be that practicing self-compassion may eventually lead to greater growth than the other two conditions, but that it takes more time to take effect. Indeed, jumping too soon to problem-solving behaviours has been theoretically linked with experiential avoidance (i.e., avoiding inner thoughts, feelings, and emotions), which is associated with a whole host of negative outcomes (Harris, 2006). Thus, while individuals in the self-compassion condition did not immediately report greater growth than those in either of the other two conditions, it is possible that this may actually reflect the process of self-compassion, and that differences in growth emerge with time.

It is also a possible that too much time had elapsed between the negative event (i.e., receiving the midterm mark) and completing the reflection, rendering the reflection less useful and thus obscuring the results. Participants had received their midterm mark an average of 16
days prior to completing the baseline survey and they would have then had to wait at least one day, and up to one month to complete the reflection exercise. The time between receiving the midterm grade and reflecting on the difficult experience of receiving the grade might have reduced the effectiveness of all three manipulations, and especially the self-compassion manipulation, since self-compassion works especially well in times of distress.

Another potential reason for the lack of a clear distinction between groups on measures of growth could be that all three groups engaged in a reflection exercise, a coping strategy that has shown to have many well-being benefits (Ullrich & Lutgendorf, 2002). That each group engaged in a reflection exercise may have watered down the effects of the self-compassion-specific manipulation, and partaking in any reflection, regardless of the specific instructions received, may have increased growth. That said, few growth variables increased across all three groups, leaving some room for improvement in terms of the strength of the manipulation.

Lastly, it is worth mentioning that improvements across all three groups could also be due to timing effects. That is, participants completed be first part of the study (i.e., the baseline survey) in a different setting than the second part (i.e., the reflection and post-test). Specifically, part one was completed online whereas part two was completed in-person. It could be that, for whatever reason, the in-person setting in part two was less stressful than taking the questionnaire at home, which accounts for apparent increase in growth variables in the control condition. Nonetheless, given the extensive research demonstrating the beneficial effects of journaling on well-being, it is more likely that the journaling manipulation had a bigger impact than timing effects (Mercer, Warson, & Zhao, 2010; Smith, Anderson-Hanley, Langrock, & Compas, 2005; Horneffer & Chan, 2009).
Both theory and research suggest that attempting to make meaning out of stressful experiences is key in creating growth. This is likely a mechanism by which self-compassion influences growth mindsets. Therefore, another element that might foster the link between the manipulation and growth would be to encourage meaning making.

Despite these apparent negative findings, there are a few very promising secondary findings that came from this research. First, although the manipulation was weak for increasing growth, the manipulation was strong when it came to increasing affective states toward one’s poor midterm mark. Additionally, the more that participants wrote in their reflection entries, the more that they reported increasing in self-reported mindfulness and self-compassion, as well as in various growth outcome measures.

5.1 Strengths

There are a few notable strengths of the current study. First, limiting the reflection to one topic (i.e., to a mark received on a midterm) increases the internal validity of the study by reducing the possible confounding variables, such as the content of the reflected material. Another strength of the current study is the use of an active control (i.e., journal reflection with instructions that did not prompt for self-compassion or mindfulness responses). Though using an active control may have made it more difficult to observe differences between mindfulness and self-compassion groups, it allowed for the disentanglement of the benefits of journaling versus journaling specifically using self-compassion or mindfulness.

5.2 Implications

The current study shed some light into the reflection strategies of self-compassion, mindfulness, and journaling in general. While a brief journaling exercise may help students deal with momentary feelings of stress and overall affect, adding in an element of self-compassion to
a journaling exercise is not likely create substantial increases in one’s growth mindsets, especially when compared against a highly related construct such as mindfulness. Though the theoretical distinction may be clear, the tangible difference may be more subtle in terms of practice, and it may take long-term practice of self-compassion, as well as long-term follow-up, to be able to clearly see growth benefits, and certainty to observe any subtle differences that may exist between groups. Nevertheless, the current study corroborates existing research supporting reflective journaling as an effective coping mechanism, and extends previous research showing that these benefits exist regardless of the specific content of the reflection (Mercer, Warson, & Zhao, 2010; Smith, Anderson-Hanley, Langrock, & Compas, 2005; Horneffer & Chan, 2009). Specifically, that writing helps to create insight into our own thoughts, creating a narrative of the situation, which, in itself, helps to create perspective (Pennebaker, 1997).

The current research also extends previous research as it demonstrated that reflecting on a poor midterm grade increases affective well-being and stress. This was true despite the short duration of the manipulation (i.e., 15 minutes) and held up regardless of condition, demonstrating that doing reflecting, regardless of the instructions given, can be beneficial. It is possible that exposure to the stressful event may be a latent factor responsible for this positive effect.

The current study also found that word count in students’ reflections was significantly correlated with a positive change in self-compassion and mindfulness; that is, the more that students wrote, the more they reported positive mindsets toward their poor midterm mark. It is possible that writing more promotes greater exposure to the stressful event, thus alleviating negative affective states to a greater extent than writing less. These findings also have the potential to be capitalized on in various stressful academic settings; specifically, encouraging
students to actively reflect on academic mishaps may help them feel better about the experience, ultimately giving students a better experience with difficult academic moments, and potentially decreasing attrition rates in universities.

The current study was also demonstrated that a brief self-compassion manipulation was able to increase self-reported levels of state self-compassion to a greater extent than a mindfulness manipulation. Interestingly, general instructions used in a reflection manipulation (i.e., control journaling instructions) may inadvertently result in a reflection that contains some elements of self-compassion, thus making it more difficult to clearly separate the control from the self-compassion manipulation. Future studies may wish to implement more specific reflection instructions to the control condition. Results also suggest that coding journaling responses may be a more sensitive tool than self-report to understand the extent to which participants in each condition followed the journaling instructions specific to their condition.

5.3 Future Research Directions

Research shows that while negative life events can cause a significant amount of stress, many individuals also experience significantly positive changes (i.e., growth; Tedeschi & Clahoun, 2004). Research indicates that mindfulness and self-compassion are both effective in reducing psychological distress after significant life disruptions (Bishop et al., 2004, Neff & Germer, 2013), but comparatively less is known about how each may contribute specifically to growth as a result of stressful life experiences. The current study sought to detect how self-compassion and mindfulness may contribute to the growth-related benefits that students may experience after a stressful experience. The main limitation of the current study was the relative weakness of the self-compassion and mindfulness manipulations, making it difficult to determine whether or not nonsignificant findings reflect that the two are truly indistinguishable when it
comes to growth. Thus, future studies are encouraged to develop stronger self-compassion and mindfulness manipulations. This might include incorporating a 1-hour introductory in-person didactic session, where concepts of self-compassion or mindfulness are introduced and practiced, and questions about how to practice are answered. Having a more comprehensive understanding of the constructs might help to increase engagement during implementation. Additionally, increasing the length of the intervention may also help to increase the strength of the manipulation. Current self-compassion interventions range in duration from a single 10-minute session to 2-hour weekly sessions for 12 weeks (see Ferrai et al., 2019). A next logical step may be to extend the current manipulation to 2 weeks of self-compassion or mindfulness practice, where individuals are encouraged to practice reflecting on any difficult experiences that arises throughout the day (rather than a single event). Employing real-time reflections, rather than a single reflection weeks after a stressful event has occurred, is also likely to increase the effectiveness of the reflection. ‘Coping cards’, a common strategy used in cognitive behavioural therapy, may be implemented using self-compassion- and mindfulness-specific coping phrases (Wright, Basco, & Thase, 2017). When an individual experiences a stressful or negative experience, they may take out the coping card and read a phrase that engenders either a self-compassionate or mindful response. A longer intervention may also allow sufficient time for growth outcomes to develop.

5.4 Conclusion

The aim of the current study was to delineate the relative contribution of a self-compassion and mindfulness on outcomes related to growth in an academic setting by asking students to reflect on a poor midterm mark using self-compassion, mindfulness, or control journaling instructions. While some elements of growth increased from baseline regardless of
condition, groups did not significantly differ on any of the outcomes related to growth suggesting that although theoretical differences exist between mindfulness and self-compassion, the practical implications are less clear and remain a fruitful topic for future study. More importantly though, the current study highlighted the importance of reflecting on a stressful academic experience, specifically for decreasing stress and negative affect, and to some extent increasing positive affect, toward the event. This finding has the potential to be capitalized on in various stressful academic settings; specifically, students should be encouraged to actively reflect on their academic mishaps in order to feel better about the experience.
Running head: SELF-COMPASSION AND PSYCHOLOGICAL GROWTH

Tables

Table 4.1
Skew, Kurtosis, and Shapiro-Wilk Statistics for Main Outcome Variables by Condition

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SCS-M</td>
<td>54</td>
<td>-.569</td>
<td>-.241</td>
<td>.959,p = .063</td>
<td>57</td>
<td>-.003</td>
<td>-.518</td>
<td>.985,p = .708</td>
<td>59</td>
<td>-.415</td>
<td>.105</td>
<td>.979,p = .403</td>
<td>57</td>
<td>-.124</td>
<td>-.330</td>
<td>.986,p = .785</td>
</tr>
</tbody>
</table>

Note: N = sample size; S-W = Shapiro-Wilk’s; COPE-Active = Active Coping Subscale on COPE Scale; COPE-Planning = Planning Subscale on COPE Scale; COPE-PRG = Positive Reinterpretation and Growth Subscale on COPE Scale; COPE-Accept = Acceptance Coping Subscale on COPE Scale; COPE-Denial = Denial Coping Subscale on COPE Scale; AGQ-MAP: Achievement Goal Questionnaire-Revised – Mastery-Approach Goals; AGQ-MAV = Achievement Goal Questionnaire-Revised – Mastery-Avoidance; AGQ-R-PAP = Achievement Goal Questionnaire-Revised – Performance-Approach Goals; AGQ-R-PAV = Achievement Goal Questionnaire-Revised – Performance-Avoidance Goals; PCLS = Perceived Competence for Learning Scale.

* Data presented are from post-intervention variables
### Table 4.2

Baseline and Post-Intervention Means and Standard Deviations of Self-Compassion and Mindfulness, and Effect sizes for the Difference Scores, Organized by Condition

<table>
<thead>
<tr>
<th></th>
<th>Self-Compassion Group</th>
<th>Mindfulness Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>Post</td>
<td>Post-Baseline</td>
</tr>
<tr>
<td>SCS-M</td>
<td>4.15 (.70)</td>
<td>4.84 (.92)</td>
<td>.691***</td>
</tr>
<tr>
<td>SMS-M</td>
<td>2.80 (.89)</td>
<td>2.92 (.79)</td>
<td>.126</td>
</tr>
</tbody>
</table>

Note: M = Mean; SD = Standard Deviation; SCS-M = Self-Compassion Scale-Modified; SMS-M = State Mindfulness Scale-Modified

* *p < .05, **p < .01, ***p < .001
### Table 4.3
***ANOVA and Change Scores ANOVA Results for Self-Compassion and Mindfulness Variables***

<table>
<thead>
<tr>
<th></th>
<th>ANCOVA F (df)</th>
<th>ANCOVA Sig.</th>
<th>ANCOVA Partial Eta Squared</th>
<th>Change Scores ANOVA F (df)</th>
<th>Change Scores ANOVA Sig.</th>
<th>Change Scores ANOVA Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCS-M</td>
<td>9.059 (2, 171)</td>
<td>.000</td>
<td>.096</td>
<td>8.161 (2, 171)</td>
<td>.000</td>
<td>.087</td>
</tr>
<tr>
<td>SMS-M</td>
<td>.762 (2)</td>
<td>.469</td>
<td>.009</td>
<td>1.204 (2)</td>
<td>.302</td>
<td>.014</td>
</tr>
</tbody>
</table>
### Table 4.4
**Post-hoc Pairwise Comparisons for Self-Compassion Variable**

<table>
<thead>
<tr>
<th></th>
<th>Mean Difference</th>
<th>Sig.</th>
<th>ANCOVA 95% CI [lower bound, upper bound]</th>
<th>ANOVA Change Scores</th>
<th>Sig.</th>
<th>95% CI [lower bound, upper bound]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-compassion – Mindfulness</td>
<td>.483</td>
<td>.000</td>
<td>[.208, .757]</td>
<td>.467</td>
<td>.000</td>
<td>[.1906, .7436]</td>
</tr>
<tr>
<td>Self-compassion – Control</td>
<td>.263</td>
<td>.065</td>
<td>[-.012, .537]</td>
<td>.302</td>
<td>.028</td>
<td>[.0269, .5777]</td>
</tr>
<tr>
<td>Control – Mindfulness</td>
<td>.220</td>
<td>.154</td>
<td>[-.051, .491]</td>
<td>.165</td>
<td>.322</td>
<td>[-.1056, .4353]</td>
</tr>
</tbody>
</table>
Table 4.5
*Means and Standard Deviations of Coded Journaling Responses in the Facets of Mindfulness, Self-Kindness, and Common Humanity by Condition*

<table>
<thead>
<tr>
<th></th>
<th>Self-Compassion</th>
<th>Mindfulness</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>95% CI</td>
<td>M(SD)</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>2.19 (.50)</td>
<td>[2.06, 2.33]</td>
<td>1.81 (.63)</td>
</tr>
<tr>
<td>Self-Kindness</td>
<td>2.34 (.70)</td>
<td>[2.15, 2.53]</td>
<td>.67 (.71)</td>
</tr>
<tr>
<td>Common Humanity</td>
<td>1.89 (.97)</td>
<td>[1.63, 2.15]</td>
<td>.08 (.21)</td>
</tr>
</tbody>
</table>

Note: M = Mean; SD = Standard Deviation
### Table 4.6

**Baseline and Post-Intervention Means and Standard Deviations of Stress, Positive Affect, and Negative Affect, and Effect Sizes for the Differences Scores, Organized by Condition**

<table>
<thead>
<tr>
<th></th>
<th>Self-Compassion Group</th>
<th>Mindfulness Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline M(SD)</td>
<td>Post M(SD)</td>
<td>Post-Baseline</td>
</tr>
<tr>
<td>Stress</td>
<td>59.59 (19.23)</td>
<td>40.24 (23.16)</td>
<td>-19.35 (23.63)***</td>
</tr>
<tr>
<td>Positive Affect</td>
<td>15.69 (5.58)</td>
<td>18.87 (5.33)</td>
<td>3.18 (5.28)***</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>14.71 (4.40)</td>
<td>10.98 (4.80)</td>
<td>-3.73 (4.62)***</td>
</tr>
</tbody>
</table>

Note: M = Mean, SD = Standard Deviation.  
* *p < .05, **p < .01, ***p < .001,
### Table 4.7

**Baseline and Post-Test Pearson Correlations for Self-Compassion, Mindfulness, Growth Variables, and Non-Growth Variables**

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SMS-M</td>
<td>-</td>
<td>.109</td>
<td>.226**</td>
<td>.286**</td>
<td>.292**</td>
<td>.167*</td>
<td>.253**</td>
<td>.122</td>
<td>.108</td>
<td>.133</td>
<td>.200*</td>
<td>.123</td>
<td>.246**</td>
<td>.086</td>
<td>.108</td>
<td>.047</td>
<td>.045</td>
</tr>
<tr>
<td>2. SCS-M</td>
<td>.113</td>
<td>-</td>
<td>.156*</td>
<td>.171*</td>
<td>.408**</td>
<td>.317**</td>
<td>-.189*</td>
<td>-.119</td>
<td>-.102</td>
<td>-.128</td>
<td>-.106</td>
<td>.323**</td>
<td>-.136</td>
<td>-.065</td>
<td>-</td>
<td>-</td>
<td>-.183</td>
</tr>
<tr>
<td>3. COPE-Active</td>
<td>.244**</td>
<td>-.038</td>
<td>-</td>
<td>.773</td>
<td>.436**</td>
<td>-.071</td>
<td>.120</td>
<td>.139</td>
<td>.270**</td>
<td>.428**</td>
<td>.360**</td>
<td>-.115</td>
<td>.220**</td>
<td>-.096</td>
<td>.058</td>
<td>.245**</td>
<td></td>
</tr>
<tr>
<td>4. COPE-Planning</td>
<td>.240**</td>
<td>.031</td>
<td>.792**</td>
<td>-</td>
<td>-.574</td>
<td>.417**</td>
<td>-.048</td>
<td>.156*</td>
<td>.147</td>
<td>.239**</td>
<td>.454**</td>
<td>.376**</td>
<td>-.001</td>
<td>.165*</td>
<td>-.090</td>
<td>-.031</td>
<td>.119</td>
</tr>
<tr>
<td>5. COPE-PRG</td>
<td>.422**</td>
<td>.355**</td>
<td>.432**</td>
<td>.486**</td>
<td>-</td>
<td>.441**</td>
<td>-.020</td>
<td>.108</td>
<td>.125</td>
<td>.167*</td>
<td>.350**</td>
<td>.389**</td>
<td>.026</td>
<td>.004</td>
<td>-.076</td>
<td>-.084</td>
<td>.090</td>
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<tr>
<td>6. COPE-Accept</td>
<td>.170*</td>
<td>.235**</td>
<td>.229**</td>
<td>.217**</td>
<td>.246**</td>
<td>-</td>
<td>-.117</td>
<td>.203**</td>
<td>.253**</td>
<td>.190*</td>
<td>.325**</td>
<td>.226**</td>
<td>-.018</td>
<td>.112</td>
<td>-</td>
<td>-.005</td>
<td>.134</td>
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<tr>
<td>7. COPE-Denial</td>
<td>.253**</td>
<td>-.108</td>
<td>.022</td>
<td>-.034</td>
<td>.042</td>
<td>-.163*</td>
<td>-</td>
<td>.040</td>
<td>.026</td>
<td>.068</td>
<td>-.140</td>
<td>-</td>
<td>-.278**</td>
<td>-.166*</td>
<td>-.228**</td>
<td>-.161*</td>
<td>-.111</td>
</tr>
<tr>
<td>8. AGQ-R-MAP</td>
<td>.183*</td>
<td>-</td>
<td>.216**</td>
<td>.162*</td>
<td>.060</td>
<td>.122</td>
<td>.130</td>
<td>-.898</td>
<td>-.307**</td>
<td>.246**</td>
<td>.202**</td>
<td>.203**</td>
<td>.050</td>
<td>.008</td>
<td>.149*</td>
<td>.024</td>
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<tr>
<td>9. AGQ-R-MAV</td>
<td>.211**</td>
<td>-.159*</td>
<td>.251**</td>
<td>.155*</td>
<td>.083</td>
<td>.080</td>
<td>.083</td>
<td>.835**</td>
<td>-</td>
<td>.367**</td>
<td>.318**</td>
<td>.180**</td>
<td>.210**</td>
<td>.102</td>
<td>-.058</td>
<td>.170*</td>
<td>.056</td>
</tr>
<tr>
<td>10. AGQ-R-PAP</td>
<td>.195**</td>
<td>-.188*</td>
<td>.270**</td>
<td>.184*</td>
<td>.148</td>
<td>.097</td>
<td>-.015</td>
<td>.406**</td>
<td>.436**</td>
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<td>.490**</td>
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<td>.038</td>
<td>.156*</td>
<td>.006</td>
<td>.110</td>
<td>.151*</td>
</tr>
<tr>
<td>11. AGQ-R-PREV</td>
<td>.103</td>
<td>.004</td>
<td>.445**</td>
<td>.390**</td>
<td>.112</td>
<td>.231**</td>
<td>-</td>
<td>.314**</td>
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<td>.310**</td>
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<td>.237**</td>
<td>-.072</td>
<td>.169*</td>
<td>.199**</td>
</tr>
<tr>
<td>12. PCLS</td>
<td>.065</td>
<td>.195**</td>
<td>.225**</td>
<td>.274**</td>
<td>.200**</td>
<td>.112</td>
<td>-.191*</td>
<td>.130*</td>
<td>.142</td>
<td>.344**</td>
<td>-</td>
<td>-.130</td>
<td>.086</td>
<td>-.184*</td>
<td>-.114</td>
<td>-.130</td>
<td></td>
</tr>
<tr>
<td>13. Cause-Others</td>
<td>.085</td>
<td>-.176*</td>
<td>-.018</td>
<td>-.046</td>
<td>-.069</td>
<td>-.029</td>
<td>.273**</td>
<td>.202**</td>
<td>.202**</td>
<td>-.001</td>
<td>-.159*</td>
<td>-.106</td>
<td>-</td>
<td>-.225**</td>
<td>-.002</td>
<td>-.324**</td>
<td></td>
</tr>
<tr>
<td>14. Cause-Something</td>
<td>.015</td>
<td>-.082</td>
<td>.169*</td>
<td>.140</td>
<td>-.011</td>
<td>.172*</td>
<td>-.200*</td>
<td>.102</td>
<td>.102</td>
<td>.092</td>
<td>.259**</td>
<td>-.002</td>
<td>-</td>
<td>-</td>
<td>-.374**</td>
<td>.711**</td>
<td></td>
</tr>
<tr>
<td>I did</td>
<td>.056</td>
<td>.183*</td>
<td>.015</td>
<td>-.081</td>
<td>.056</td>
<td>-.123</td>
<td>.291**</td>
<td>.087</td>
<td>.087</td>
<td>.101</td>
<td>-.120</td>
<td>-.029</td>
<td>.192*</td>
<td>-.024</td>
<td>-</td>
<td>.012</td>
<td>-.180*</td>
</tr>
<tr>
<td>Bad Luck</td>
<td>.016</td>
<td>-.004</td>
<td>-.012</td>
<td>-.121</td>
<td>-.048</td>
<td>.073</td>
<td>.042</td>
<td>.042</td>
<td>-.041</td>
<td>.029</td>
<td>-.184*</td>
<td>.014</td>
<td>.184*</td>
<td>.044</td>
<td>-</td>
<td>-.294**</td>
<td></td>
</tr>
<tr>
<td>Person I am</td>
<td>.195**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Fault</td>
<td>-.012</td>
<td>-.147</td>
<td>.053</td>
<td>.037</td>
<td>-.103</td>
<td>.021</td>
<td>-.192*</td>
<td>.070</td>
<td>.070</td>
<td>.108</td>
<td>.209**</td>
<td>.090</td>
<td>-.453**</td>
<td>-.185*</td>
<td>.307***</td>
<td>-</td>
<td>.244**</td>
</tr>
</tbody>
</table>

Note: M = Mean; SD = Standard Deviation; COPE-Active = Active Coping Subscale on COPE Scale; COPE-Planning = Planning Subscale on COPE Scale; COPE-Accept = Acceptance Coping Subscale on COPE Scale; COPE-Denial = Denial Coping Subscale on COPE Scale; COPE-PRG = Positive Reinterpretation and Growth Subscale on COPE Scale; AGQ = Achievement Goal Questionnaire; Revised = Mastery-Avoidance; AGQ-R-PAP = Achievement Goal Questionnaire-Revised – Performance-Approach Goals; AGQ-R-PREV = Achievement Goal Questionnaire-Revised – Performance-Approach Goals; AGQ-R-PAV = Achievement Goal Questionnaire-Revised – Performance-Avoidance Goals; PCLS = Perceived Competence for Learning Scale.

* Growth variables are bolded

1 Baseline correlations appear below the diagonal line; post correlations appear above the diagonal line

*p < .05, **p < .01
**Table 4.8**
Baseline and Post-Test Means and Standard Deviations of Growth Variables, and Effect Sizes for the Difference Scores, Organized by Condition

<table>
<thead>
<tr>
<th></th>
<th>Self-compassion Group</th>
<th>Mindfulness Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline M(SD)</td>
<td>Post-test M(SD)</td>
<td>Baseline M(SD)</td>
</tr>
<tr>
<td>COPE-Active</td>
<td>3.09 (.65)</td>
<td>3.09 (.69)</td>
<td>.002</td>
</tr>
<tr>
<td>COPE-Planning</td>
<td>3.16 (.69)</td>
<td>3.21 (.69)</td>
<td>.045</td>
</tr>
<tr>
<td>COPE-PRG</td>
<td>2.86 (.75)</td>
<td>3.17 (.63)</td>
<td>.309**</td>
</tr>
<tr>
<td>AGQ-R-MAP</td>
<td>3.80 (.98)</td>
<td>3.62 (1.15)</td>
<td>-.176</td>
</tr>
<tr>
<td>AGQ-R-MAV</td>
<td>3.82 (.89)</td>
<td>3.61 (1.17)</td>
<td>-.218†</td>
</tr>
<tr>
<td>PCLS</td>
<td>5.74 (1.11)</td>
<td>5.94 (1.11)</td>
<td>.200†</td>
</tr>
<tr>
<td>Cause -Something I did Fault</td>
<td>3.80 (.97)</td>
<td>4.02 (1.87)</td>
<td>.218†</td>
</tr>
<tr>
<td></td>
<td>3.87 (.86)</td>
<td>3.84 (.92)</td>
<td>.036</td>
</tr>
</tbody>
</table>

Note: M = Mean; SD = Standard Deviation; COPE-Active = Active Coping Subscale on COPE Scale; COPE-Planning = Planning Subscale on COPE Scale; COPE-PRG = Positive Reinterpretation and Growth Subscale on COPE Scale; AGQ-MAP = Achievement Goal Questionnaire-Revised – Mastery-Approach Goals; AGQ-MAV = Achievement-Goal Questionnaire-Revised - Mastery-Avoidance; PCLS = Perceived Competence for Learning Scale.

*p < .05, **p < .01, ***p < .001, †.05 < p < .10
### ANCOVA and Change Scores ANOVA Results for Growth Variables

<table>
<thead>
<tr>
<th></th>
<th>ANCOVA</th>
<th>Change Scores ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F (df)</td>
<td>Sig.</td>
</tr>
<tr>
<td>COPE-Active</td>
<td>.213   (2)</td>
<td>.809</td>
</tr>
<tr>
<td>COPE-Planning</td>
<td>1.460  (2)</td>
<td>.235</td>
</tr>
<tr>
<td>COPE-PRG</td>
<td>2.39   (2)</td>
<td>.788</td>
</tr>
<tr>
<td>AGQ-R-MAP</td>
<td>1.255  (2)</td>
<td>.288</td>
</tr>
<tr>
<td>AGQ-R-MAV</td>
<td>.652   (2)</td>
<td>.522</td>
</tr>
<tr>
<td>PCLS</td>
<td>464    (2)</td>
<td>.630</td>
</tr>
<tr>
<td>Cause – Something I Did *</td>
<td>.765   (2)</td>
<td>.467</td>
</tr>
<tr>
<td>Fault</td>
<td>1.644  (2)</td>
<td>.196</td>
</tr>
</tbody>
</table>

Note: COPE-Active = Active Coping Subscale on COPE Scale; COPE-Planning = Planning Subscale on COPE Scale; COPE-PRG = Positive Reinterpretation and Growth Subscale on COPE Scale; AGQ-MAP: Achievement Goal Questionnaire-Revised – Mastery-Approach Goals; AGQ-MAV = Achievement-Goal Questionnaire-Revised - Mastery-Avoidance; PCLS = Perceived Competence for Learning Scale.

* Variable that violated the assumption of homogeneity of regression slopes for ANCOVA
Table 4.10

<table>
<thead>
<tr>
<th></th>
<th>Self-compassion Group</th>
<th>Mindfulness Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline M(SD)</td>
<td>Post-test M(SD)</td>
<td>Post-Baseline M(SD)</td>
</tr>
<tr>
<td>COPE-Accept</td>
<td>3.03 (.64)</td>
<td>3.22 (.66)</td>
<td>.185*</td>
</tr>
<tr>
<td>COPE-Denial</td>
<td>1.28 (.49)</td>
<td>1.18 (.36)</td>
<td>-.100</td>
</tr>
<tr>
<td>AGQ-R-PAP</td>
<td>3.45 (.91)</td>
<td>3.55 (1.06)</td>
<td>.115</td>
</tr>
<tr>
<td>AGQ-R-PAV</td>
<td>4.42 (.56)</td>
<td>4.44 (.51)</td>
<td>.024</td>
</tr>
<tr>
<td>Cause – Others</td>
<td>1.78 (1.10)</td>
<td>1.84 (1.05)</td>
<td>.055</td>
</tr>
<tr>
<td>Cause – Bad luck</td>
<td>1.69 (.86)</td>
<td>1.74 (.87)</td>
<td>.056</td>
</tr>
<tr>
<td>Cause – Person I am</td>
<td>2.73 (1.35)</td>
<td>2.85 (1.38)</td>
<td>.127</td>
</tr>
</tbody>
</table>

Note: M = Mean; SD = Standard Deviation; COPE-Accept = Acceptance Coping Subscale on COPE Scale; COPE-Denial = Denial Coping Subscale on COPE Scale; AGQ-R-PAP = Achievement Goal Questionnaire-Revised – Performance-Approach Goals; AGQ-R-PAV = Achievement Goal Questionnaire-Revised – Performance-Avoidance Goals.

*p < .05, **p < .01, ***p < .001
Table 4.11

<table>
<thead>
<tr>
<th>ANCOVA and Change Scores ANOVA Results for Non-Growth Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COPE-Accept</strong></td>
</tr>
<tr>
<td>2.020 (2)</td>
</tr>
<tr>
<td><strong>COPE-Denial</strong></td>
</tr>
<tr>
<td><strong>AGQ-R-PAP</strong></td>
</tr>
<tr>
<td><strong>AGQ-R-PAV</strong></td>
</tr>
<tr>
<td><strong>Cause – Others</strong></td>
</tr>
<tr>
<td><strong>Cause – Bad Luck</strong></td>
</tr>
<tr>
<td><strong>Cause – Person</strong></td>
</tr>
</tbody>
</table>

Note: COPE-Accept = Acceptance Coping Subscale on COPE Scale; COPE-Denial = Denial Coping Subscale on COPE Scale; AGQ-R-PAP = Achievement Goal Questionnaire-Revised – Performance-Approach Goals; AGQ-R-PAV = Achievement Goal Questionnaire-Revised – Performance-Avoidance Goals.

* Variables that violated the assumption of homogeneity of regression slopes for ANCOVA
Table 4.12

Pearson Correlations Between Baseline Mindfulness and Self-Compassion and Change in Growth Variables

<table>
<thead>
<tr>
<th></th>
<th>Baseline Self-Compassion</th>
<th>Baseline Mindfulness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ COPE-Active</td>
<td>.017</td>
<td>-.088</td>
</tr>
<tr>
<td>Δ COPE-Planning</td>
<td>-.075</td>
<td>-.105</td>
</tr>
<tr>
<td>Δ COPE-PRG</td>
<td>-.128</td>
<td>-.218*</td>
</tr>
<tr>
<td>Δ AGQ-R-MAP</td>
<td>.151*</td>
<td>-.038</td>
</tr>
<tr>
<td>Δ AGQ-R-MAV</td>
<td>.075</td>
<td>-.076</td>
</tr>
<tr>
<td>Δ PCLS</td>
<td>-.095</td>
<td>-.115</td>
</tr>
<tr>
<td>Δ Cause – Something I Did</td>
<td>-.027</td>
<td>.023</td>
</tr>
<tr>
<td>Δ Fault</td>
<td>.074</td>
<td>-.032</td>
</tr>
</tbody>
</table>

Note: Δ = Change in Variable from Baseline to Post-Intervention; COPE-Active = Active Coping Subscale on COPE Scale; COPE-Planning = Planning Subscale on COPE Scale; COPE-PRG = Positive Reinterpretation and Growth Subscale on COPE Scale; AGQ-R-MAP: Achievement Goal Questionnaire-Revised – Mastery-Approach Goals; AGQ-MAV = Achievement-Goal Questionnaire-Revised - Mastery-Avoidance; PCLS = Perceived Competence for Learning Scale.

*p < .05, **p < .01, ***p < .001
Table 4.13
*Pearson Correlations Between Changes in Mindfulness and Self-Compassion and Changes in Growth Variables*

<table>
<thead>
<tr>
<th></th>
<th>Δ SCS-M</th>
<th>Δ SMS-M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ COPE-Active</td>
<td>.103</td>
<td>.210**</td>
</tr>
<tr>
<td>Δ COPE-Planning</td>
<td>.182*</td>
<td>.243**</td>
</tr>
<tr>
<td>Δ COPE-PRG</td>
<td>.306***</td>
<td>.317**</td>
</tr>
<tr>
<td>Δ AGQ-R-MAP</td>
<td>-.275***</td>
<td>-.002</td>
</tr>
<tr>
<td>Δ AGQ-R-MAV</td>
<td>-.120</td>
<td>.015</td>
</tr>
<tr>
<td>Δ PCLS</td>
<td>.158*</td>
<td>.285***</td>
</tr>
<tr>
<td>Δ Cause – Something I Did</td>
<td>-.082</td>
<td>-.016</td>
</tr>
<tr>
<td>Δ Fault</td>
<td>-.207**</td>
<td>.064</td>
</tr>
</tbody>
</table>

Note: Δ = Change in Variable from Baseline to Post-Intervention; SCS-M = Self-Compassion Scale-Modified; SMS-M = State Mindfulness Scale-Modified; COPE-Active = Active Coping Subscale on COPE Scale; COPE-Planning = Planning Subscale on COPE Scale; COPE-PRG = Positive Reinterpretation and Growth Subscale on COPE Scale; AGQ-MAP: Achievement Goal Questionnaire-Revised – Mastery-Approach Goals; AGQ-MAV = Achievement-Goal Questionnaire-Revised - Mastery-Avoidance; PCLS = Perceived Competence for Learning Scale.

*p < .05, **p < .01, ***p < .001
Table 4.14

*Pearson Correlation Between Personality Factors and Changes in Self-Compassion and Mindfulness Variables from Baseline to Post-Test*

<table>
<thead>
<tr>
<th></th>
<th>BFI-Extroversion</th>
<th>BFI-Agreeableness</th>
<th>BFI-Conscientiousness</th>
<th>BFI-Neuroticism</th>
<th>BFI-Openness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ SCS-M</td>
<td>-0.058</td>
<td>0.196**</td>
<td>0.116</td>
<td>0.114</td>
<td>-0.035</td>
</tr>
<tr>
<td>Δ SMS-M</td>
<td>-0.175*</td>
<td>-0.046</td>
<td>-0.054</td>
<td>0.033</td>
<td>0.017</td>
</tr>
</tbody>
</table>

Note: Δ = Change in Score from Baseline to Post-Intervention; SCS-M = Self-Compassion Scale-Modified; SMS-M = State Mindfulness Scale-Modified; BFI = Big Five Inventory

*p < .05, **p < .01
Table 4.15

Pearson Correlation Between Personality Factors and Changes in Growth Variables from Baseline to Post-Test

<table>
<thead>
<tr>
<th></th>
<th>BFI-Extroversion</th>
<th>BFI-Agreeableness</th>
<th>BFI-Conscientiousness</th>
<th>BFI-Neuroticism</th>
<th>BFI-Openness</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \Delta \text{COPE-Active} )</td>
<td>.011</td>
<td>-.005</td>
<td>-.067</td>
<td>-.019</td>
<td>-.029</td>
</tr>
<tr>
<td>( \Delta \text{COPE-Planning} )</td>
<td>-.078</td>
<td>-.023</td>
<td>-.100</td>
<td>.101</td>
<td>-.084</td>
</tr>
<tr>
<td>( \Delta \text{COPE-PRG} )</td>
<td>-.221*</td>
<td>.005</td>
<td>-.114</td>
<td>.125</td>
<td>.034</td>
</tr>
<tr>
<td>( \Delta \text{AGQ-R-MAP} )</td>
<td>.114</td>
<td>.056</td>
<td>.133</td>
<td>-.106</td>
<td>.148</td>
</tr>
<tr>
<td>( \Delta \text{AGQ-R-MAV} )</td>
<td>.048</td>
<td>-.037</td>
<td>.159*</td>
<td>-.059</td>
<td>-.012</td>
</tr>
<tr>
<td>( \Delta \text{PCLS} )</td>
<td>-.123</td>
<td>-.023</td>
<td>-.027</td>
<td>.042</td>
<td>-.122</td>
</tr>
<tr>
<td>( \Delta \text{Cause – Something I Did} )</td>
<td>-.046</td>
<td>.010</td>
<td>-.154*</td>
<td>-.015</td>
<td>-.094</td>
</tr>
<tr>
<td>( \Delta \text{Fault} )</td>
<td>-.072</td>
<td>-.062</td>
<td>-.114</td>
<td>-.061</td>
<td>-.096</td>
</tr>
</tbody>
</table>

Note: BFI = Big Five Inventory; COPE-Active = Active Coping Subscale on COPE Scale; COPE-Planning = Planning Subscale on COPE Scale; COPE-PRG = Positive Reinterpretation and Growth Subscale on COPE Scale; AGQ-MAP: Achievement Goal Questionnaire-Revised – Mastery-Approach Goals; AGQ-MAV = Achievement-Goal Questionnaire-Revised - Mastery-Avoidance; PCLS = Perceived Competence for Learning Scale.

*p < .05, **p < .01
Table 4.16

*Pearson Correlation Between Personality Factors and Changes in Growth Variables from Baseline to Post-Test*

<table>
<thead>
<tr>
<th></th>
<th>BFI-Extroversion</th>
<th>BFI-Agreeableness</th>
<th>BFI-Conscientiousness</th>
<th>BFI-Neuroticism</th>
<th>BFI-Openness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ COPE-Acceptance</td>
<td>.008</td>
<td>.058</td>
<td>.064</td>
<td>-.060</td>
<td>.011</td>
</tr>
<tr>
<td>Δ COPE-Denial</td>
<td>-.037</td>
<td>.035</td>
<td>.026</td>
<td>-.067</td>
<td>.147</td>
</tr>
<tr>
<td>Δ AGQ-R-PAP</td>
<td>-.005</td>
<td>.042</td>
<td>.041</td>
<td>-.026</td>
<td>-.012</td>
</tr>
<tr>
<td>Δ AGQ-R-PAV</td>
<td>-.036</td>
<td>-.022</td>
<td>-.057</td>
<td>.018</td>
<td>-.089</td>
</tr>
<tr>
<td>Δ Cause – Others</td>
<td>.025</td>
<td>.095</td>
<td>.079</td>
<td>.055</td>
<td>.173*</td>
</tr>
<tr>
<td>Δ Cause – Bad Luck</td>
<td>-.028</td>
<td>.049</td>
<td>.007</td>
<td>-.069</td>
<td>.114</td>
</tr>
<tr>
<td>Δ Cause – Person I Am</td>
<td>-.083</td>
<td>-.078</td>
<td>-.057</td>
<td>-.053</td>
<td>.011</td>
</tr>
</tbody>
</table>

Note: BFI = Big Five Inventory; COPE-Accept = Acceptance Coping Subscale on COPE Scale; COPE-Denial = Denial Coping Subscale on COPE Scale; AGQ-R-PAP = Achievement Goal Questionnaire-Revised – Performance-Approach Goals; AGQ-R-PAV = Achievement Goal Questionnaire-Revised – Performance-Avoidance Goals.

*p < .05, **p < .01*
Table 4.17  
*Pearson Correlations Between Word Count and Change in Self-Compassion and Mindfulness Variables*

<table>
<thead>
<tr>
<th>Change in Variable</th>
<th>Word Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ SCS-M</td>
<td>.338***</td>
</tr>
<tr>
<td>Δ SMS-M</td>
<td>.188*</td>
</tr>
</tbody>
</table>

Note: Δ = Change in Variable from Baseline to Post-Intervention; SCS-M = Self-Compassion Scale-Modified; SMS-M = State Mindfulness Scale-Modified  
*p < .05, **p < .01, ***p < .001*
Table 4.18

_Pearson Correlations Between Word Count and Change in Growth Variables_

<table>
<thead>
<tr>
<th>Change in Variable</th>
<th>Word Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ COPE-Active</td>
<td>-.087</td>
</tr>
<tr>
<td>Δ COPE-Planning</td>
<td>-.014</td>
</tr>
<tr>
<td>Δ COPE-PRG</td>
<td>.180*</td>
</tr>
<tr>
<td>Δ AGQ-R-MAP</td>
<td>-.056</td>
</tr>
<tr>
<td>Δ AGQ-R-MAV</td>
<td>-.102</td>
</tr>
<tr>
<td>Δ PCLS</td>
<td>.025</td>
</tr>
<tr>
<td>Δ Cause – Something I Did</td>
<td>0.276***</td>
</tr>
<tr>
<td>Δ Fault</td>
<td>-.112</td>
</tr>
</tbody>
</table>

Note: Δ = Change in Variable from Baseline to Post-Intervention; COPE-Active = Active Coping Subscale on COPE Scale; COPE-Planning = Planning Subscale on COPE Scale; COPE-PRG = Positive Reinterpretation and Growth Subscale on COPE Scale; AGQ-R-MAP = Achievement Goal Questionnaire-Revised – Mastery-Approach Goals; AGQ-R-MAV = Achievement Goal Questionnaire-Revised – Mastery-Avoidance; PCLS = Perceived Competence for Learning Scale.

*p < .05, **p < .01, ***p < .001
Table 4.19
*Pearson Correlations Between Word Count and Change in Non-Growth Variables*

<table>
<thead>
<tr>
<th></th>
<th>Word Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ COPE-Acceptance</td>
<td>.041</td>
</tr>
<tr>
<td>Δ COPE-Denial</td>
<td>.125</td>
</tr>
<tr>
<td>Δ Goals-PAP</td>
<td>.027</td>
</tr>
<tr>
<td>Δ Goals-PAV</td>
<td>-.032</td>
</tr>
<tr>
<td>Δ Cause-others</td>
<td>.042</td>
</tr>
<tr>
<td>Δ Cause-badluck</td>
<td>-.089</td>
</tr>
<tr>
<td>Δ Cause-person</td>
<td>-.082</td>
</tr>
</tbody>
</table>

Note: COPE-Accept = Δ = Change in Variable from Baseline to Post-Intervention; Acceptance Coping Subscale on COPE Scale; COPE-Denial = Denial Coping Subscale on COPE Scale; AGQ-R-PAP = Achievement Goal Questionnaire-Revised – Performance-Approach Goals; AGQ-R-PAV = Achievement Goal Questionnaire-Revised – Performance-Avoidance Goals.

*p < .05, **p < .01, ***p < .001
Table 4.20

*Pearson Correlations Between Word Count and Change in Self-Compassion and Mindfulness Variables Separated by Condition*

<table>
<thead>
<tr>
<th></th>
<th>Self-Compassion Condition</th>
<th>Mindfulness Condition</th>
<th>Control Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ SCS-M</td>
<td>.263</td>
<td>.259*</td>
<td>.232†</td>
</tr>
<tr>
<td>Δ SMS-M</td>
<td>.289*</td>
<td>.082</td>
<td>.202</td>
</tr>
</tbody>
</table>

Note: Δ = Change in Variable from Baseline to Post-Intervention; SCS-M = Self-Compassion Scale-Modified; SMS-M = State Mindfulness Scale-Modified
*p < .05, **p < .01, ***p < .001, †.05 < p < .10
Table 4.21

*Pearson Correlations Between Word Count and Change in Growth Variables Separated by Condition*

<table>
<thead>
<tr>
<th></th>
<th>Self-Compassion Condition</th>
<th>Mindfulness Condition</th>
<th>Control Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ COPE-Active</td>
<td>-.001</td>
<td>.048</td>
<td>-2.84*</td>
</tr>
<tr>
<td>Δ COPE-Planning</td>
<td>.238</td>
<td>-.025</td>
<td>-.144</td>
</tr>
<tr>
<td>Δ COPE-PRG</td>
<td>.266*</td>
<td>.211</td>
<td>-.018</td>
</tr>
<tr>
<td>Δ AGQ-R-MAP</td>
<td>-.083</td>
<td>-.011</td>
<td>.005</td>
</tr>
<tr>
<td>Δ AGQ-R-MAV</td>
<td>-1.57</td>
<td>-.023</td>
<td>-.040</td>
</tr>
<tr>
<td>Δ PCLS</td>
<td>.114</td>
<td>.053</td>
<td>.020</td>
</tr>
<tr>
<td>Δ Cause – Something I Did</td>
<td>-.363**</td>
<td>-.102</td>
<td>-.323*</td>
</tr>
<tr>
<td>Δ Fault</td>
<td>-.073</td>
<td>-.123</td>
<td>-.073</td>
</tr>
</tbody>
</table>

Note: Δ = Change in Variable from Baseline to Post-Intervention; COPE-Active = Active Coping Subscale on COPE Scale; COPE-Planning = Planning Subscale on COPE Scale; COPE-PRG = Positive Reinterpretation and Growth Subscale on COPE Scale; AGQ-MAP = Achievement Goal Questionnaire-Revised – Mastery-Approach Goals; AGQ-MAV = Achievement-Goal Questionnaire-Revised - Mastery-Avoidance; PCLS = Perceived Competence for Learning Scale.

*p < .05, **p < .01, ***p < .001
Table 4.22  
**Pearson Correlations Between Word Count and Change in Non-Growth Variables Separated by Condition.**

<table>
<thead>
<tr>
<th></th>
<th>Word Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self-Compassion Condition</td>
</tr>
<tr>
<td>( \Delta \text{COPE-Acceptance} )</td>
<td>-.030</td>
</tr>
<tr>
<td>( \Delta \text{COPE-Denial} )</td>
<td>.302*</td>
</tr>
<tr>
<td>( \Delta \text{Goals-PAP} )</td>
<td>.021</td>
</tr>
<tr>
<td>( \Delta \text{Goals-PAV} )</td>
<td>-.018</td>
</tr>
<tr>
<td>( \Delta \text{Cause-others} )</td>
<td>-.005</td>
</tr>
<tr>
<td>( \Delta \text{Cause-badluck} )</td>
<td>-.017</td>
</tr>
<tr>
<td>( \Delta \text{Cause-person} )</td>
<td>-.138</td>
</tr>
</tbody>
</table>

Note: COPE-Accept = \( \Delta \) = Change in Variable from Baseline to Post-Intervention; Acceptance Coping Subscale on COPE Scale; COPE-Denial = Denial Coping Subscale on COPE Scale; AGQ-R-PAP = Achievement Goal Questionnaire-Revised – Performance-Approach Goals; AGQ-R-PAV = Achievement Goal Questionnaire-Revised – Performance-Avoidance Goals. 
*\( p < .05 \), **\( p < .01 \), ***\( p < .001 \)
References


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https://doi.org/10.1016/j.paid.2017.05.045


https://doi.org/10.1037/tra0000208


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Sin, N. L., & Lyubomirsky, S. (2009). Enhancing Well-Being and Alleviating Depressive

*Journal of Clinical Psychology: In Session,* https://doi.org/10.1002/jclp.20593


*Psycho-Oncology* 14, 1075-1082. DOI: 10.1002/pon.912


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https://doi.org/10.1080/01488376.2015.1033584


https://doi.org/10.1207/S15324796ABM2403_10


Appendices

Appendix A: SONA Recruitment Ad

Part One:

Study Name: PART 1 (of 2) – Overcoming a Dissatisfying Midterm Mark: A Reflective Journaling Experience
Study Type: Online External Study
Duration: 30 minutes
Credits: 0.5 Credits
Abstract: (online and in-person). This is PART ONE of TWO. The purpose of this study is to test the effectiveness of different stress management techniques on academic well-being outcomes.
Description: This study involves 2 parts, in which you will receive 1.5 SONA credits (0.5% credits online for Part One; 1% credits in-person for Part 2) for your participation. The first part will be completed online, on your own time and will consist of a questionnaire (approx. 20-25 minutes) that will include questions about your midterm, emotions, and mindsets. The second part (found on a separate SONA study page) will be in-person, and will require you to complete a reflection exercise, whereby you will reflect on your midterm mark, followed by the same questionnaire that you completed in part one (approx. 60 minutes). You MUST sign up for BOTH Part 1 AND Part 2!

In order to be eligible for part two, you MUST have completed part one.

To protect the integrity of the study and to benefit the most from the reflection, we kindly ask that you sign up for the earliest time slot that is available to you.

Please sign up for Part 2 when you sign up for Part 1.

Eligibility Requirements: Completed & received mark from one exam this term; dissatisfied with mark; academically oriented; will write a second exam for the course; access to laptop/tablet with internet; access to SONA to receive course credits; Will complete PART TWO.
Preparation: Be prepared to answer a question concerning the mark you received on your midterm as a percentage and the date you received the mark.

Part Two:

Study Name: Part 2 (of 2) – Overcoming a Dissatisfying Midterm Mark: A Reflective Journaling Experience
Study Type: Standard (lab) study
Duration: 60 minutes
Credits: 1 Credits
Abstract: (in-person) This is PART TWO of TWO. The purpose of this study is to test the effectiveness of different stress management techniques on academic well-being outcomes.
Description: This study involves 2 parts, in which you will receive 1.5 SONA credits (0.5% for Part 1 online; 1% for Part 2 in-person) for your participation. You MUST have already signed up for Part 1.
This part of the study (the second part) will be in-person and will require you to complete a reflection exercise, whereby you will reflect on your midterm mark, followed by the same questionnaire that you completed in part one (~60 minutes). When choosing your time slot to complete the in-person Part 2, choose a timeslot that is AFTER you plan to complete the online Part 1 portion of this study. In order to be eligible for part two, you MUST have completed part one.

To protect the integrity of the study and to benefit the most from the reflection, we Kindly ask that you sign up for the earliest time slot that is available to you after you plan to complete Part 1 online. ideally, this will be a few days after you complete Part 1 online.

Eligibility Requirements: Have access to a laptop/tablet with internet access and can bring with you to the session; have completed PART ONE of this study;

Preparation: Please bring a LAPTOP or TABLET that will connect to the internet (NOT a cell phone).
Appendix B: Informed Consent and Participant Code Information

Informed Consent

Overcoming a Dissatisfying Midterm Mark: a Reflective Journaling Experience

Principal Investigator (PI):
Derrick Wirtz, Ph.D., Associate Professor, UBCO

Co-Investigators:
Lesley Lutes, Ph.D., R. Psych., Associate Professor, UBCO
Zachary Walsh, Ph.D., R. Psych., Associate Professor, UBCO
Chloe Briggs, BSc., UBCO

Research Assistants:
Alexa Rysen, UBCO
Courtney Anderson, UBCO
Hitomi Yamakawa, UBCO

Please read this consent agreement carefully before you decide to participate in the study. We encourage you to print this consent form for your records. A URL is provided at the end of this page.

Purpose of this Research Study:
You are being invited to participate in a study titled “Overcoming a Dissatisfying Midterm Mark: a Reflective Journaling Experience”. This study is focused on dealing with a difficult experience with a midterm through journaling.

Eligibility
You are eligible to participate in this study if...

- You agree to complete PART TWO of this study (in-person session).
- You have access to a laptop or tablet with internet access that you may use to complete the in-person session (part two).
- You are currently enrolled in a Psychology Course and have access to SONA to receive course credits for your participation
- You have completed and received your percentage mark from at least one exam from any course (not restricted to a psychology course)
- You are dissatisfied with the mark you received or feel that you did not do as well as you feel you are capable of.
- You are at least moderately academically oriented
- You have a second exam that you know you will write in the same course.

What you will do as part of this study:
This study takes part in two sections with an optional third part. The first section requires you to complete an initial brief questionnaire that will ask you about your emotions and regular disposition, as well as a few questions concerning your experience with your exam. This section
can be completed immediately after you decide you would like you participate and should take about 15 minutes. The second section of this study requires you to come into the lab. Thus, you will be asked to choose from a list of available times to come in to complete the second section when you are finished with the first section. You will receive a confirmation email for your selected time, as well as a reminder email the day before your appointment. For the second section, you will be asked to complete a journaling exercise on a computer in the lab. This journaling exercise will require you to reflect on the experience you had with your exam. A tutorial will be given that will guide you in your reflection. We ask that you try your best to follow the instructions for this task so that you may experience optimal benefits from the exercise. After you complete the journaling exercise, you will be asked to complete a second questionnaire that will assess your mindset toward your experience with the exam and the course more generally. The third component is optional in that it is voluntary - you will not receive course credit for your participation in the third part of the study. If you agree to participate in the third part, you will receive an email that will contain two follow-up questions related to your academic success in the course. This email will be sent roughly 2 months after you complete your reflection exercise or at the end of the semester and should take no longer than 5 minutes.

Not everyone in this study will receive the same reflection instructions. The specific reflection instructions that you receive will be based on the condition that you have been randomly assigned to. In order to protect the integrity of the study, please do not disclose the reflection instructions that you have received to another member of the study.

In order for the results to be interpretable to the researchers, we must obtain data from BOTH part ONE and part TWO of the study. Please do not consider participating in part ONE of this study if you do not intend to complete part TWO. In order to receive full credits (i.e., both the online and in-person study SONA credits), you must complete BOTH part one and part two of the study.

Questions/Surveys:
You will be asked questions about your feelings, thoughts, beliefs, intentions, and actions that may or may not be part of your life.

Time required and credits awarded:
The total time to complete this study is expected to be around 1.5 hours:
1. Initial online survey - 15 minutes
2. Tutorial on reframing thoughts - 45 minutes
3. Reflection - 15 minutes
4. Volunteer Email follow-up - 5 minutes

Cost, Reimbursement, and Compensation
0.5 credits will be awarded upon completion of part one; 1.0 credit will be awarded upon completion of part 2. In total, 1.5 SONA credits will be provided upon the completion of all of the sections of the study
Participants’ Rights
Your participation is completely voluntary. You do not have to answer every question and you may withdraw from study at any time without explanation and without penalty. You may ask that your data be withdrawn or destroyed at any point throughout the study. If you choose to withdraw from the study, please note that your data will not be withdrawn unless you have given the researcher explicit request to destroy your data. If you have any questions before starting the study, please contact the researcher via email before you begin. Credit will be awarded for those parts of the study that were completed according to the guidelines above.

Risks & Benefits:
There are minimal risks associated with this study. You are likely to become more aware of some difficult emotions, but this is no more than you would experience in your everyday life. We hope that the results of this study will help us to better understand the coping strategies that will promote well-being and recovery after stressful experiences. Additionally, you may gain insight into how you may deal with negative events in the future, academic or otherwise, that may contribute to your emotional well-being. In the event of an unexpected adverse reaction to the reflection exercise, you will be provided with a resource sheet that will include the contact information of various on-campus resources for additional academic or emotional supports.

Confidentiality/Anonymity
Your responses will be completely confidential. You will be asked to provide a self-created code to use when completing surveys so your name is not directly associated with your responses. You will also provide your email so that we may send email reminders and to contact you with the material for part three. Any information used from this study will be reported in group form only and will not identify you in any way. The survey is hosted by the UBC Survey Tool, a secure, Canadian survey system that meets all of the requirements of the BC Freedom of Information and Protection of Privacy Act. All data are stored and backed up in Canada. All data will be downloaded and stored on an encrypted flash drive that will be stored in a locked filing cabinet in the PI’s office.

Use of Data Collected
When the study is complete, all of your data will be retained for a minimum of five years after the data has been published. The findings will be presented as part of a thesis project. The data may also be submitted for publication in scientific journals and presented at scientific conferences. No names or other identifying information will be used in any reports of the study.

Study Results
Please email a member of the research team if you would like to receive the results of the study.

Contact Information of the Researchers
Should you have any questions regarding this research project, please email UBCOMSC@gmail.com. For more specific or urgent inquiries, you may contact the study personnel directly:
Chloe Briggs, Masters Student, UBC: chloe.briggs@mail.utoronto.ca;
Dr. Derrick Wirtz, Senior Instructor, UBC: derrick.wirtz@ubc.ca
Dr. Lesley Lutes, Associate Professor, UBC: lesley.lutes@ubc.ca
Dr. Zachary Walsh, Associate Professor, UBC: zachary.walsh@ubc.ca

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Services at 1-877-822-8598 or the UBC Okanagan Research Services Office at 250-807-8832. It is also possible to contact the Research Participant Complaint Line by email (RSIL@ors.ubc.ca). Please reference the study number (H18-02243) when contacting the Complaint Line so the staff can better assist you.

Agreement
Completing the survey and agreeing to consent in no way limits your legal rights against the investigators or anyone else and you will not waive any of your legal rights by agreeing to this consent form. Your rights to privacy are also protected by the Freedom of Information and Protection of Privacy Act of British Columbia. This Act lays down rules for the collection, protection, and retention of your personal information by public bodies, such as the University of British Columbia. By agreeing to participate in this study, you acknowledge that all of your questions pertaining the current study have been answered and that you have been given the access to a copy of the consent form with the study information to keep. Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time without jeopardizing your class standing.

You are encouraged to download a copy of this consent form for your records. Please print or screenshot this consent form. Alternatively, you may follow the following URL for access: file:///Users/chloebriggs/Documents/Documents/UBC%20-%20Masters/Proposal:Thesis%20/Materials/Consent%20V2%20-%20Webpage.html

If you have read and understood the above information and agree to take part in this research, please click the "NEXT" button. Pressing this button will indicate your consent to participate in this study.
Participant Code Information

Your answers are protected by an individual identification code that you will provide below. All of your responses to this survey are confidential. No one except the researchers will know how you answered the questions. Your identity is kept separate from your answers. The researchers will only link your name to the survey if required by law as described in the consent form you agree to by participating. Summary information will only be presented as part of group data and will not be identified with you individually. By entering your unique ID code, you agree that you have read, understand, and agree to the provisions described in the consent form.

If you change your mind at any point and do not wish to participate, then you may stop the survey without penalty and tell the researcher that you wish to withdraw. If you withdraw, any information you have provided will be used unless you explicitly tell the researcher not to.

If you decide to take part, you may choose to pull out of the study at any time without giving a reason and without any negative impact on you. By entering your unique ID number you confirm your consent to participate in this study with these researchers. If you do not wish to participate, then close this web page.

Create your identifying code such that you do not forget it when you come back in for PART TWO of the study. DO NOT use your CWL username or passcode. You could use the name of your pet, for instance. Make sure it is specific enough so that someone else doesn’t have the same code as you do, but still easy enough to remember. DO NOT CHOOSE: “passcode”, “password”, “SONA” “psychology” etc. This passcode has to be unique to you and you must remember it for Part Two.
Appendix C: Initial Measures

Please enter your year of study:
- First year undergraduate
- Second year undergraduate
- Third year undergraduate
- Fourth year undergraduate
- Other (please specify) _______________

Please enter your exam mark as a percentage: ____________________

Please enter the number of days it has been since receiving your exam mark: ____________________

Please enter the date of your next exam in this course (MM/DD/YY): ____________________

Please indicate the extent to which you agree with the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I received the mark I want</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I consider this mark to be a failure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Doing well in this course is important to me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
Appendix D: Measures

D. 1 Scale of Positive and Negative Experience (SPANE) – Modified

Please indicate the extent to which you are currently experiencing each of the following feelings:

<table>
<thead>
<tr>
<th>Feeling</th>
<th>Not at all</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Very</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Negative</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Good</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Bad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Pleasant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Unpleasant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Happy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Sad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Afraid</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Joyful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Angry</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Contented</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
D. 2 Stress Visual Analogue Scale (VAS)

Please indicate the level of stress you feel toward the exam you wrote RIGHT NOW using the slider bar on the small ruler.
D. 3 Big Five Inventory (BFI):

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please indicate the extent to which you agree or disagree that you are someone who ...
<table>
<thead>
<tr>
<th>Trait</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is considerate and kind to almost everyone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does things efficiently</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remains calm in tense situations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prefers work that is routine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is outgoing, sociable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is sometimes rude to others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Makes plans and follows through with them</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gets nervous easily</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likes to reflect, play with ideas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has few artistic interests</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likes to cooperate with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is easily distracted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is sophisticated in art, music, or literature.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### D. 4 Self-Compassion Scale-Modified (SCS-M)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am disapproving and judgmental of my performance on my exam</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I am obsessing and fixating on what I did wrong on my exam</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I see my performance on this exam as a difficult part of life that everyone goes through</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Thinking about my mark on this exam makes me feel more separate and cut off from the rest of the world</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I am trying to be loving toward myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I am consumed by feelings of inadequacy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I am reminding myself that there are lots of other people in the world feelings like I am</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I am being tough on myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>Item</td>
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</tr>
<tr>
<td>I am trying to keep my emotions in balance</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I am trying to remind myself that feelings of inadequacy are shared by most people</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am intolerant and impatient toward my performance</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>I am giving myself the caring and tenderness I need</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>I feel like most other people are probably happier than I am right now</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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</tr>
<tr>
<td>I am trying to take a balanced view of the situation</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I am trying to see my failing as part of the human condition</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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<tr>
<td>I am getting down on myself</td>
<td>1 2 3 4 5 6 7</td>
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</tr>
<tr>
<td>I am trying to keep things in perspective</td>
<td>1 2 3 4 5 6 7</td>
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<tr>
<td>I feel like other people must be having an easier time right now</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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<tr>
<td>I am being kind to myself</td>
<td>1 2 3 4 5 6 7</td>
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<tr>
<td>I am getting carried away</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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</tr>
</tbody>
</table>
with my feelings
I am being a bit cold-hearted toward myself
I am trying to approach my feelings with curiosity and openness
I am being intolerant of my flaws and inadequacies concerning my performance on this exam
I am blowing the incident out of proportion
I feel alone in my personal failure
I am trying to be understanding and patient with myself

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</tr>
</tbody>
</table>
D. 5 State Mindfulness Scale – Modified (SMS-M)

Please indicate the degree to which you experienced the following when you LAST thought about your midterm exam:

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>I was aware of different emotions that arose in me</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I tried to pay attention to pleasant and unpleasant sensations</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I found some of my experiences interesting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I noticed small details of my experience</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>I felt aware of what was happening inside of me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I noticed pleasant and unpleasant emotions</td>
<td></td>
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<td></td>
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<tr>
<td>I actively explored my experiences in the moment</td>
<td></td>
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<tr>
<td>I clearly physically felt what was going on in my body</td>
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<tr>
<td>I changed my body posture and paid attention to the physical process of moving</td>
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</tr>
<tr>
<td>I felt that I was experiencing the present moment fully</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>I noticed the pleasant and unpleasant thoughts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I noticed emotions come and go</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I noticed various sensations caused by my emotions (e.g., tightness in my chest, breath speeding up)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I noticed physical sensations come and go</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I had moments when I felt alert and aware</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I felt closely connected to the present moment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I noticed thoughts come and go</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt in contact with my body</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I was aware of what was going on in my mind</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It was interesting to see the pattern of my thinking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
I noticed some pleasant and unpleasant physical sensations
D. 6 COPE Scale

There are a lot of ways to deal with stress. Please indicate what you PLAN on doing to cope with the stressful event.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>I will try to grow as a person as a result of this experience</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will concentrate on my efforts on doing something</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will say to myself “this isn’t real”</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will get used to the idea that it happened</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will make a plan of action</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will accept that this has happened and that it can’t be changed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will take additional action to try to get rid of the problem</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will refuse to believe that it has happened</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will try to see it in a different light, to make it seem more positive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will try to come up with a strategy about what to do</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will look for something good in what is happening</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will think about how I might best handle the problem</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will pretend that it hasn’t really happened</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will accept the reality of the fact that it happened</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will take direct action to get around the problem</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will learn to live with it</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will think hard about what steps to take</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will act as though it hasn’t happened</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will do what has to be done, one step at a time</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I will learn something from the experience</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
D. 7 Achievement Goal Questionnaire-Revised

Please indicate the extent to which you agree with the following statements when thinking about your goals for the course

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My aim will be to completely master the material presented in this class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I will strive to do well compared to other students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My goal will be to learn as much as possible</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My aim will be to perform well relative to other students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My aim will be to avoid learning less than I possibly could</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My goal will be to avoid performing poorly compared to others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I will strive to understand the content of this course as thoroughly as possible</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My goal will be to perform better than other students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My goal will be to avoid learning less than it is possible to learn</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I will strive to avoid performing worse than others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I will strive to avoid an incomplete understanding of the course material</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My aim will be to avoid doing worse than other students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
D. 8 Perceived Competence for Learning Scale (PCLS)

Please indicate the extent to which the following statements are true of you:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not true at all</th>
<th>Somewhat true</th>
<th>Very true</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am confident in my ability to learn the material in this course</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I am capable of learning the material in this course</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I am able to achieve my goals in this course</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I am able to meet the challenge of performing well in this course</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td></td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
D. 9 Acceptance of Failure

Please rate the degree to which the unsatisfactory mark was caused by each of the following:

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Very</th>
<th>Completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Something I did</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Bad luck</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The kind of person I am</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

(personality, abilities, attitudes, character, etc.)

Please indicate the extent to which the event was your fault:

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Very</th>
<th>Completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
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</tbody>
</table>
Appendix E: Journaling Instructions

E.1 Self-Compassion Condition

During this reflection exercise, you will learn how to cope with the difficult experience you had with your midterm exam using self-compassion.

Why Journaling?

People who journal on a regular basis about stressful or negative events tend to be at an advantage when it comes to coping. Writing about negative events allows us to process difficult thoughts, feelings, and emotions associated with the event in a safe and comfortable environment.

What is Self-Compassion?

There are three core features of self-compassion:

1. Mindfulness: Sometimes we can get caught up in tough emotions, letting them take us on a wild ride. We may feel angry at ourselves long after the negative event has passed, repeating the story in our head over and over, dwelling on all of the negative repercussions of our mistake. Other times, we may completely avoid feeling certain ways because these emotions are so uncomfortable. We may not admit when we are angry to others, and sometimes even to ourselves. Mindfulness means becoming aware when these stressful or negative experiences occur. It involves becoming curious about our thoughts and feelings during these tough times, noticing them as they are in the present moment with acceptance, rather than getting caught up in them with self-judgment and self-criticism. Mindfulness calls us to be present with our thoughts and feelings with an attitude of openness, curiosity, and acceptance to the present moment.

2. Common-humanity: When are going through a hard time, it can be easy to think that we are the only ones going through the situation. In these moments, you may have thought that everyone seems to have it together except you; that you are alone in your mishap; that, surely, everyone else is having an easier time at this than you are. Common humanity means seeing your own suffering as part of the larger human experience. It means recognizing that everyone feels this way, and that you are not alone in your suffering.

3. Self-kindness: It’s natural to criticize yourself when you are having a difficult time, fail, or notice something you don’t like about yourself. Self-kindness means being kind and understanding toward oneself in times of pain or failure, similar to how you would a good friend.

Let’s look at an example!
One time I accidentally gave a participant too much money as compensation for their participation in a large, international study. We were on a budget, and I had doubled the amount that I was supposed to give them. Of course, I had to report my error to my team, but I was dreading it: “If I tell them, they will think I can’t handle being part of a large study”.

My reflection using self-compassion:

Mindfulness
Thinking back to that event, I feel guilt, shame, and embarrassment. I regretted my error and felt pretty foolish - I didn’t want to let the team down. The predominating emotion here is disappointment. My chest feels tight, my face feels numb, and my body feels hot. I am letting these emotions come into my consciousness without getting caught up in a story or judging myself for having these feelings. I accept these feelings as they are, and I am remaining open and curious to what other emotions may arise.

Common Humanity.
It is completely normal to slip up every once in a while, especially when first starting out in the study. I am certainly not the first master’s student in a large study to slip-up. This was also one of the first participants in the study, and the team was just getting things figured out. Perhaps if I hadn’t made this mistake, someone else would have.

Self-kindness
I understand my disappointment – I am just starting out and I want to make a good impression, so any mistake feels ten times worse. But I have been doing a great job thus far, regardless of what happened. I am bound to make some mistakes when first starting out – this is a great learning experience! There is no point dwelling on the past, and I am sure my colleagues will understand once I explain what happened. In fact, they may admire my honesty and straightforwardness.

Your turn!
Try practicing self-compassion toward your performance on your midterm exam. You are encouraged to reference the above example to give you some ideas about how to approach each of the self-compassion components.

Briefly describe the event

Bring awareness to the painful emotions that are arising. Write about how you felt: sad, ashamed, frightened, stressed, etc. As you write, try to be accepting and non-judgmental of your experience, not belittling it nor making it overly dramatic.

Write down the ways in which your experience was connected to the larger human experience. This might include acknowledging that being human means being imperfect, and that all people have these sorts of painful experiences. You might also want to think about the various causes and conditions underlying the painful event.
Write yourself some kind, understanding, words of comfort. Let yourself know that you care about yourself, adopting a gentle, reassuring tone.
E.2 Mindfulness Condition

During this reflection exercise, you will learn how to cope with the difficult experience you had with your midterm exam using mindfulness.

Why Journaling?

People who journal on a regular basis about stressful or negative events tend to be at an advantage when it comes to coping. Writing about negative events allows us to process difficult thoughts, feelings, and emotions associated with the event in a safe and comfortable environment.

What is Mindfulness?

Sometimes we can get caught up in tough emotions, letting them take us on a wild ride. We may feel angry at ourselves long after the negative event has passed, repeating the story in our head over and over, dwelling on all of the negative repercussions of our mistake. Other times, we may completely avoid feeling certain ways because these emotions are so uncomfortable. We may not admit when we are angry to others, and sometimes even to ourselves.

Mindfulness means becoming aware when these stressful or negative experiences occur. It involves becoming curious about our thoughts and feelings during these tough times, noticing them as they are in the present moment with acceptance, rather than getting caught up in them with self-judgment and self-criticism. Mindfulness calls us to be present with our thoughts and feelings with an attitude of openness, curiosity, and acceptance to the present moment.

Let’s look at an example!

One time I accidentally gave a participant too much money as compensation for their participation in a large, international study. We were on a budget, and I had doubled the amount I was supposed to give to them. Of course, I had to report my error to my team, but I was dreading it: “If I tell them, they will think I can’t handle being part of a large study”.

My reflection using mindfulness:

Thinking back to that event, I feel guilt, shame, and embarrassment. I regretted my error and felt pretty foolish - I didn’t want to let the team down. The predominating emotion here is disappointment. My chest feels tight, my face feels numb, and my body feels hot. I am letting these emotions come into my consciousness without getting caught up in a story or judging myself for having these feelings. I accept these feelings as they are, and I am remaining open and curious to what other emotions may arise.

Your turn!
Try practicing mindfulness toward your performance on your midterm exam. You are encouraged to reference the above example to give you some ideas about how to approach each of the mindfulness components.

Briefly describe the event

Bring awareness to the painful emotions that are arising. Write about how you felt: sad, ashamed, frightened, stressed, etc. As you write, try to be accepting and non-judgmental of your experience, not belittling it nor making it overly dramatic.
E.3 Control Condition

During this exercise, you will use journaling as a way to cope with the difficult experience you had with your midterm exam.

Why Journaling?

People who journal on a regular basis about stressful or negative events tend to be at an advantage when it comes to coping. Writing about negative events allows us to process difficult thoughts, feelings, and emotions associated with the event in a safe and comfortable environment.

Let’s look at an example!

One time I accidentally gave a participant too much money as compensation for their participation in a large, international study. We were on a budget, and I had doubled the amount that I was supposed to give them. Of course, I had to report my error to my team, but I was dreading it: “If I tell them, they will think I can’t handle being part of a large study”.

My reflection:

How I have tried to make sense of the situation:
I was fairly focused on checking off all of the boxes that needed to be checked before running this participant, that I didn’t pay enough attention to the minute details of those checked boxes. We didn’t communicate that the envelopes were already filled with money, so I mistakenly thought that they hadn’t been filled yet. I’m a little disappointed in myself because I want to make a good impression as a new researcher, hence not wanting to tell my team.

What you tell yourself about it to help you deal with it:
Although I acknowledge that this was a mistake, I also understand that I am in my early years as a researcher and that errors are bound to happen. Ultimately, this was a learning experience, and I will be sure to be more vigilant in the future. It makes me feel better knowing that we will see this participant again and can make up for the excess amount of money distributed by subtracting from the money given at the follow-up session. My team is very understanding and I’m sure they do not think that I am incapable of being a member of this project. In fact, they may admire my honesty and straightforwardness.

Your turn!

Try writing about your thoughts and feelings toward your performance on your midterm exam. You are encouraged to reference the above example to give you some ideas about how to approach answering each of the following.

Briefly describe the event
How have you tried to make sense of the situation?

What do you tell yourself about it to help you deal with it?
Appendix F: Protocol for Research Assistants

Before the Assessment

Chloe will email assessors when a new participant has signed up in their assigned time-window. However, all assessors will be responsible for checking the Google calendar regularly for assessments scheduled during their assigned time window.

If the assessor can no longer cover the scheduled appointment, he/she must find a replacement. If the assessor cannot find a replacement, he/she must inform Chloe as soon as possible.

The assessors scheduled for an appointment will check the study email account (UBCOMSC@gmail.com; password: MSCwellbeing) for possible cancellations, reschedules, or late participants leading up to the appointment.

Preparing for the Assessment

The assessor will refer to the Google Calendar to see what room has been booked for the assessment. Please arrive no less than 15 MINUTES early for your assigned assessment.

Materials:
1. Protocol
2. Resource sheets
3. Highlighted consent form
4. Part three volunteer form

Write the following URL on a whiteboard:

psychresearch.ok.ubc.ca/RJE

Participants will type in this URL into an internet browser on their laptops to complete the task.

Conducting the Assessment

Initial introductions
- The assessor will introduce themselves to the participant
  o Suggested script: Hi, are you here for the psychology study? [Wait]. Great, welcome to the study! My name is _____ and I'll be your researcher today. You can have a seat, open up your laptop/tablet, and make yourself comfortable.
- The assessor will ensure that the participant has a laptop or tablet that connects to the internet.
- Separate participants as much as possible to ensure privacy and to minimize distraction while completing the online reflection and survey.

Consenting Process
- The assessor will briefly review the procedures of the study with the participant (refer to highlights on consent sheet).
- Explain the importance of trying their best in the reflection survey.
  - For the integrity of the study
  - For their own benefit!
- Explain that they are to provide the SAME self-created ID and email that they entered in for PART ONE of the study.

Suggested script:
- You have already completed the first part of the study online on your own time. This is the second part of the study, which is the only in-person meeting for the study. The purpose of today’s meeting is to have you complete a reflection exercise and fill out a short questionnaire on your laptop/tablet.
- The third and final part of the study will be completed online at the end of December or beginning of January. If you decide that you would like to participate in this third part, you will receive an email that will consist of a link to a short 5-minute survey. This part is voluntary, in that you will not be receiving SONA credits for your participation. However, your participation would help the researchers to gain a better understanding of the most effective ways to cope with stress in a university setting. You will be asked if you would like to participate in the third part once you begin the online component.
- This reflection will take you about 30 minutes to complete; the survey will take you about the same amount of time – 30 minutes. We ask that you try your best to follow the instructions in the reflection exercise, not only for the study, but for yourself! If you have any questions about the specific reflection instructions, please let me know and I will do my best to assist you.
- Do you have any questions about the study before we begin?
- Instruct students to insert link into internet browser
- Now you can go ahead and complete the survey and questionnaire on your computer. The survey will ask you to reflect on your midterm grade that you found difficult (the same one that you reported on in part one of the study). The questionnaire will ask you some questions about yourself, similar to the ones that you answered in part one.
- The survey will ask you to pick a code name to use during the study. Please use the same code name that you chose in the first part of the study. Any questions? Ok, go ahead and get started.

Concluding the assessment
- The assessor will provide the participant with a resource sheet
- The assessor will remind the participant that we will be following up with an email around 2 months from now if they have decided they would like to participate in part 3. Let them know that this part involves a very short survey that will take less than 5
minutes. If they change their mind and decide they would like to participate in part 3, have the participant enter their email on the “Part three volunteer form”.
- Thank the participant for their time!

Suggested Script

- Thank you, that’s it for today! If you have any questions, please just email us back. If you decide that you would like to participate in part three, but did not indicate it on the online survey, you may write down your email on this sheet (Volunteer sign-up sheet).
- Lastly, we are providing everyone that comes in for this study with a resource sheet for academic and emotional help on campus in case you would like some help in dealing with your midterm mark [GIVE THEM THE SHEET]
- Once again, thank you for helping with this study and have a good day!
Appendix G: Resource Sheet for Students

University of British Columbia Okanagan Counselling and Health Services

If you have experienced any adverse reactions in your reflection about your midterm or would like additional supports going forward, please refer to the following resources:

- To book an appointment with a counsellor at the Health and Wellness Centre, call **250-807-9270** or come to **UNC 337**

- If the Health and Wellness Centre is closed, you may contact UBCO Security at their emergency number of **250-807-8111**

- As a UBCO student, you have 24/7 access to Studentcare’s EmpowerMe support services
  - Phone: **1-844-741-6389**
  - [https://ear.powerflexweb.com/1545/login_SC.html](https://ear.powerflexweb.com/1545/login_SC.html)

- **24 Hour Crisis line**: **1-800-784-2433 (1-800-SUICIDE)**

- **Student Services**:
  - UNC206Z 2nd floor front desk.
  - Telephone: **250-807-9100**
  - Email: sis.ubco@ubc.ca

Please visit [https://students.ok.ubc.ca/health-wellness/counselling.html](https://students.ok.ubc.ca/health-wellness/counselling.html) for more information
Appendix H: Coding Scheme

Constructs:
- Mindfulness
- Common Humanity
- Self-kindness

Ratings:
0 = not at all
1 = a little bit
2 = moderately
3 = very much

AS DEFINED IN THE STUDY:

1. Mindfulness.

Sometimes we can get caught up in tough emotions, letting them take us on a wild ride. We may feel angry at ourselves long after the negative event has passed, repeating the story in our head over and over, dwelling on all of the negative repercussions of our mistake. Other times, we may completely avoid feeling certain ways because these emotions are so uncomfortable. We may not admit when we are angry to others, and sometimes even to ourselves.

Mindfulness means becoming aware when these stressful or negative experiences occur. It involves becoming curious about our thoughts and feelings during these tough times, noticing them as they are in the present moment with acceptance, rather than getting caught up in them with self-judgment and self-criticism. Mindfulness calls us to be present with our thoughts and feelings with an attitude of openness, curiosity, and acceptance to the present moment.

2. Common Humanity.

When we are going through a hard time, it can be easy to think that we are the only ones going through the situation. In these moments, you may have thought that everyone seems to have it together except you; that you are alone in your mishap; that, surely, everyone else is having an easier time at this than you are.

Common humanity means seeing your own suffering as part of the larger human experience. It means recognizing that everyone feels this way, and that you are not alone in your suffering.


It is natural to criticize yourself when you are having a difficult time, fail, or notice something you don't like about yourself. Self-kindness means being kind and understanding toward oneself in times of pain or failure, similar to how you would a good friend.
INSTRUCTIONS USED IN THE STUDY

Mindfulness. Bring awareness to the painful emotions that are arising. Write about how you felt: sad, ashamed, frightened, stressed, etc. As you write, try to be accepting and non-judgmental of your experience, not belittling it nor making it overly dramatic.

Self-Kindness. Write yourself some kind, understanding, words of comfort. Let yourself know that you care about yourself, adopting a gentle, reassuring tone.

Common-Humanity. Write down the ways in which your experience was connected to the larger human experience. This might include acknowledging that being human means being imperfect, and that all people have these sorts of painful experiences. You might also want to think about the various causes and conditions underlying the painful event.

EXAMPLES

Mindfulness

0-point response:
I don’t remember how I felt, I just wrote the exam
- Avoidance
I’m furious – the professor shouldn’t have made the test so hard. It was so unfair.
- Venting, amplification of emotions
It just doesn’t make any sense to me how I got such a bad grade when I studied so hard. I swore I knew all of the answers. It bothers me that other people got a better grade than me – how could they have gotten that high of a grade when I studied all of the same material?
- Rumination
Or no mention of mindfulness.

1-point response:
Sad... I should have studied more.
- Labeling of emotions but elaboration in a way that is not mindful.

2-point response:
I was/am feeling ashamed, anxious, and sad.
- Labelling emotions but no label of bodily sensations

3-point response:
I was/am feeling ashamed, anxious, and sad. My heart is beating faster, and my arms feel hot. I feel all of these negative emotions and that’s okay.
- Label emotions and label of bodily sensations OR statement of acceptance.
Common Humanity

0-point response:
I got an average mark so there are definitely individuals who received a worse mark than me but I’m usually an above-average student so that makes it much worse for me. I want to get into med school and this grade is preventing me from doing that.

Or no mention of common humanity

1-point response:
I know that ‘everyone makes mistakes’, but I really don’t want to get a bad mark in this class.

2-point response:
I realize that this was a tough midterm for everyone. My performance on the exam makes sense given how much was on my plate that week.

3-point response:
Everyone gets bad grades and, if I’m being realistic, it is unlikely that a person will go through their academic career without getting one disappointing grade. Surely Albert Einstein received a grade that he was not happy with. My performance on the exam makes sense given how much was on my plate that week.

Self-Kindness

0-point response:
I’m such a failure. I should have known better to study harder.
- Self-criticism.
I thought I studied hard, but I guess not.

1-point response:
I’ll just have to study harder for the next exam.

2-point response:
You still got an above average grade. That’s not so bad

3-point response
I did a great job in my other midterms. So, I didn’t do as well as I would have liked on this exam – so what! It is not the end of the world. I can study harder for the next exam and kill it in the class. This exam grade does not dictate my worth as a student!