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**SELF-REGULATION OF ACADEMIC PROCRASTINATORS:
A MIXED METHODS STUDY**

A Thesis in
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by
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ABSTRACT

Previous procrastination research has provided considerable support for procrastination as a failure of self-regulation. However, procrastination has been rarely examined in relation to models of self-regulated learning. Accordingly, the purpose of this study was to understand the motives and reasons for academic procrastination from a self-regulated learning perspective. Using a mixed-methods study, forty-one students completed measures of students' academic procrastination and their self-regulation and academic motivation and participated in semi-structured interviews conducted to explore students' perceptions of and their reasons for procrastination. Results indicate that academic procrastination was related to students' defensive behaviors including self-handicapping as well as low use of regulatory strategies. Support for students' demonstration of procrastination as an adaptive behavior ("active procrastination") was also indicated. Implications for both research and practice are provided.

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Chapter 1

Introduction

Procrastination is a prevalent, but troubling phenomenon in academic settings. More than 70% of college students were found to procrastinate on a regular basis and about 20% of them reported chronic procrastination (Schouwenburg, 1995). In Solomon and Rothblum's (1984) study, 46% of their undergraduate participants report procrastination when writing a term paper, 30.1% when reading weekly assignments, and 27.6% when studying for exams. Ironically, such prevailing behavior seems to harm students' learning and academic achievement. Several studies reported that procrastination contributes to missing or late assignments, decrease task preparation time, and poor performance on tests (Lay & Schouwenburg, 1993; Tice & Baumeister, 1997; van Eerde, 2003). In addition, procrastination is related to higher levels of anxiety and depression and causes negative health symptoms in the long term, thus affecting overall quality of students' lives (Lay & Schouwenburg, 1993; Ferrari, Johnson, & McCown, 1995; Tice & Baumeister, 1997). As procrastination may have a strong, negative impact on students' academic success and their well-being, it is imperative for educators to discontinue or prevent students' procrastination so that they can help students to lead successful and satisfying academic lives. In fact, the majority of students also demonstrated an intention to reduce their procrastination (Solomon & Rothblum, 1984). In order to achieve a goal of decreasing students' procrastination, the nature and the causes of procrastination should be first understood. However, previous research on procrastination has provided incomplete conclusions regarding this issue. The current study, therefore, investigated the motives and attributions for students' academic procrastination examined from a self-regulated learning perspective.

Definitions of procrastination

One of the barriers encountered in past procrastination research is the absence of a single coherent definition of procrastination. Although most people, or students, can recognize and describe their own procrastination, existing definitions of procrastination differ widely within the research literature. For example, some define activity as procrastination only if the behavior results in uncomfortable affective responses (Solomon & Rothblum, 1984) and assert that procrastination is an irrational delay, accompanied by feelings of distress. Others define procrastination in terms of an intention-action gap and claim that a simple delay of behavior is only procrastination when an individual has some genuine intention of completing the task (Lay, 1994; Steel, 2007; van Eerde, 2003). Recently, researchers noted that procrastination must be distinguished from planned delay, acknowledging that planned delay can be a wise strategy rather than irrational behavior (van Eerde, 2003; van Hooft, Born, Taris, van der Flier, & Blonk, 2005). These scholars asserted that procrastination is not purposely intended, but rather delaying the implementation of what was intended. Similarly, Steel defined procrastination as voluntary delay of an intended course of action despite aversive effects of the delay.

On the contrary, there are some researchers who regard intentional delay as procrastination (Chu & Choi, 2005; Schraw, Wadkins, & Olafson, 2007). They note that some people purposefully choose to procrastinate because they think it is beneficial to achieving their best performance. From this perspective, procrastination is understood as a simple tendency to postpone initiation of tasks, which may be associated with either positive or negative outcomes. This perspective is certainly contradictory to that of the researchers who view procrastination as irrational delay or maladaptive behavior.

Although such definitional variations may serve to illuminate procrastination from various angles, these variations reflect that there is much yet to be understood about procrastination. In addition, different definitions by different researchers may have confounded outcomes and led to

conflicting results shown in the previous research, which will be discussed in the following section, and thus they may impede the systematic development of a theoretical model of procrastination. The current study, accordingly, examined how college students describe and perceive academic procrastination as an attempt to capture the exact nature of procrastination conceptually.

Correlates of procrastination

Most previous research has attempted to explain procrastination by exploring different possible connections and correlates. Within this body of work, some studies focused on situational, or contextual, factors that may lead to procrastination. Research that takes this approach has mainly examined different task variables. One of the task variables most addressed in past work is task aversiveness. For example, Milgram, Marshevsky, and Sadeh (1995) classified different tasks into three categories (pleasant, unpleasant, and neutral) and assessed self-reported delay on each task. The results showed that students tended to delay more on unpleasant tasks as compared with neutral tasks, and on neutral tasks as compared with pleasant tasks. Senecal, Lavoie, and Koestner (1997) reported similar results. In their study, participants were asked to complete a series of four computer-administered tasks that differed in difficulty and interest (i.e., interesting and easy, interesting and difficult, boring and easy, boring and difficult). Participants rated the boring and difficult task as most aversive and they tended to begin and complete this task last. Thus, it is suggested from these studies that task aversiveness may stimulate the incidence of students' procrastinating behavior.

In related work, Ackerman and Gross (2005) also examined various task characteristics as they may affect academic procrastination. Their emphasis was on task characteristics that are manageable by the instructor and they reported that students tended to procrastinate less on

assignments that were perceived as interesting, that required a variety of skills, for which starting promptly was rewarded, and for which the teacher provided explicit instructions. Overall, the studies with a situational approach showed that different task characteristics can contribute to students' academic procrastination. The current study, however, did not explicitly examine the situational causes for academic procrastination but instead, focused more on internal variables that may influence students' procrastination. Therefore, this work is more aligned with the second approach to procrastination research, which will be explained next.

The second approach examines individual differences as correlates to procrastination. Results of this work overall suggest that academic procrastination involves a failure in self-regulation. According to Pintrich (2000), self-regulated learning refers to “an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features in the environment” (p. 453). Cognition, motivation/affect, and behavior represent different areas of regulation, and within each area different phases or processes of self-regulated learning are involved. Findings from previous procrastination research that focused on individual differences variables imply that academic procrastinators display contrast characteristics of a self-regulated learner across the different areas of regulation.

First, procrastinators appear to have a deficit in regulating their cognition. Regulation of cognition, as discussed by Pintrich (2000), involves metacognitive awareness and monitoring of cognition and selection of effective cognitive strategies; but, procrastinators seem to lack such skills. For example, McCown, Petzle, and Rupert (1987) found that procrastinators, when compared to non-procrastinators, tended to underestimate the time necessary to complete a reading task. In other words, procrastinators are more likely to fail to allot sufficient time to complete tasks. This implies a lack of metacognitive skills and it is likely that this failure also leads procrastinators to set ineffective goals and plans. Other studies also provided that

procrastinators may have a low ability to employ effective cognitive and metacognitive strategies.

Ferrari (2001) examined effects of cognitive load and time limits on the self-regulation of performance between procrastinators and non-procrastinators. In this experiment, participants were randomly assigned to either a low or high cognitive load condition and they were compared with regard to the speed and accuracy of their performance. It was found that procrastinators completed fewer items and made more errors than non-procrastinators only under the high, but not low, cognitive load conditions. This result suggests that procrastinators may have deficits in selection of effective cognitive strategies when they are working under high cognitive load.

Indeed, some studies have reported that procrastination correlated with low use of both cognitive (e.g., rehearsal and elaboration) and metacognitive (e.g., planning and monitoring) strategies (Howell & Watson, 2007; Wolters, 2003). In short, procrastinators seem to be less competent at employing successful cognitive and metacognitive strategies, representing a low capability of regulating and controlling their cognitive performances.

In addition to demonstrating failure in regulation of cognition, procrastinators also seem to lack regulation of behavior. For example, procrastinators were reported to have poor time management skills (Lay, 1992; Lay & Schouwenburg, 1993). Specifically, procrastinators were less likely to set goals and priorities, to make lists, and to perceive high control of time (Lay & Schouwenburg, 1993). A related concept to time management, disorganization, the learner's difficulty in adopting or maintaining a systematic and structured approach to studying (Entwistle, 1988), was also found to positively correlate with procrastination in several studies (Howell & Watson, 2007; Lay, 1986; Steel, 2007).

Similar to lack of time management, other studies indicated that procrastinators are less capable of following their plans and intentions (Howell, Watson, Powell, & Buro, 2006; Lay & Schouwenburg, 1993). In a study into the relationship between procrastination and academic behavior, Lay and Schouwenburg examined students' study intentions and their actual study

behaviors following an actual summer class schedule. In the beginning of the course, students indicated the number of days and the average number of hours per day they intended to study. On the final day of class, the students were asked to report the total number of days on which they had engaged in non-study behavior when they should have been studying and to indicate the number of hours per day that they had worked on the course. Students also estimated the percentage of work they actually did in the course compared to the work they had planned to do. The results of the study revealed that there was no difference between procrastinators and non-procrastinators in terms of intended, or planned, number of days and hours per day for academic work. Procrastinators, however, actually engaged in studying behavior for fewer days and fewer hours per day than non-procrastinators. Indeed, procrastinators, compared to non-procrastinators, also estimated a lower percentage of academic work actually carried out relative to the total work that they had originally planned to do. These findings suggest that procrastination, to some extent, is related to an intention-action gap.

Similarly, Howell and colleagues (2006) examined say-do correspondence and perceived academic control in relation to self-reported procrastination and behavioral postponement. Among the variables examined, say-do correspondence, the degree to which individuals do what they say they will do and carry out plans that they have made (Risley & Hart, 1968), negatively correlated with self-reported procrastination. That is, procrastinators have a higher tendency to depart from what they have planned to do. In short, procrastinators seem to display poor time management skills, disorganization, and an intention-action gap, all of which suggest lack of behavioral regulation, leading to Schouwenburg's (2004) conclusion that procrastination involves lack of self-control.

In addition to a failure in regulation of cognition and behavior, procrastinators seem to hold maladaptive motivational beliefs. One of the motivational variables most frequently examined in relation to procrastination is self-efficacy (Ferrari, Parker, & Ware, 1992; Haycock,

McCarthy, & Skay, 1998; Sirois, 2004; Steel, 2007; van Eerde, 2003). In Haycock and others study (1998), for example, participants were asked to imagine themselves doing a project (e.g., finding a job, working on a paper) and to rate their efficacy beliefs in relation to the skills needed to achieve the project. The results indicated that lack of self-efficacy significantly predicted self-reported procrastination. These researchers posit that students who are less confident of successful achievement are more likely to avoid engaging in a task. Further, when asked to provide their opinions on aspects of their performance after accomplishing a task, procrastinators were more likely to report that they performed poorly on the task and also that they would perform poorly on other similar tasks, compared to non-procrastinators (Ferrari, 2001). Similarly, when Lay (1992) provided a list of 21 everyday tasks and asked participants to rate each task regarding “how competent they were working on or doing the task (p. 487),” procrastinators tended to view themselves as less competent than non-procrastinators across all the tasks. This result implies procrastinators’ low self-efficacy beliefs in general. It seems, therefore, as reported in two meta-analytic studies (Steel, 2007; van Eerde, 2003), that self-efficacy is strongly and negatively related to procrastination.

Goal orientation is another motivational component that has been examined as a correlate of academic procrastination (Howell & Watson, 2007; McGregor & Elliot, 2002; Wolters, 2003, 2004). According to previous research, mastery and intrinsic goal orientations are related to adaptive forms of academic motivation and behavior whereas performance and extrinsic goal orientations are associated with maladaptive academic motivation and behavior. For example, a mastery goal orientation was positively related to high level of interest, effort, persistence, and a use of deep processing (Elliot, McGregor & Gable, 1999; Hidi & Harackiewicz, 2000; Miller, Greene, Montalvo, Ravindran, & Nichols, 1996); on the other hand, a performance goal orientation was positively related to anxiety, a use of surface processing, and self-handicapping behavior (Elliot et al., 1999; Hidi & Harackiewicz, 2000; Midgley & Urdan, 2001). Based on

previous studies on goal orientations, procrastination, a maladaptive academic behavior, has been considered to be associated positively with performance goal orientations and negatively with mastery goal orientations. Wolters (2004) supported this assumption revealing that procrastination correlated inversely with a mastery goal orientation and positively with both performance-approach and performance-avoidance goal orientations. However, a study by Howell and Watson reported slightly different results, when adopting “2 x 2 achievement goal framework” which includes four types of goal orientations: mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance. They found that procrastination related negatively to a mastery-approach goal orientation and positively to a mastery-avoidance goal orientation; on the other hand, procrastination did not correlate with both types of performance goal orientations. Although goal orientation is one of the strongest factors that affect students’ academic behavior, only a limited number of studies have examined it in relation to academic procrastination and the findings are mixed. Future studies may help clarify the effects of goal orientation on academic procrastination.

In addition to self-efficacy and goal orientations, other researchers have studied the effects of locus of control on procrastination. They reasoned that individuals with internal locus of control perceive a contingent relation between their behavior and situational outcomes, and thus that they are less likely to procrastinate than those with external control. As such, Janssen and Carton (1999) compared academic preparatory behavior between students with internal locus of control and those with external control. They found that students with internal control took fewer days to complete and returned the assignment earlier than students with external locus of control. Similarly, Ferrari (2001) also reported that chronic procrastinators attributed their performance to external factors such as task difficulty and luck significantly more than non-procrastinators. These studies imply that procrastinators are more likely to consider consequences to be out of their control or, at least, to attribute them to external sources. In short, procrastinators

seem to display low academic self-efficacy beliefs, external goal orientations, and low perceived personal control over academic outcomes. Such findings that procrastination is associated with maladaptive motivational beliefs suggest that procrastinators may lack regulatory skills of motivation.

Procrastination as a self-handicapping

Within the body of research that examines individual differences, some researchers further propose that procrastination is considered a self-handicapping strategy rather than simply a lack of regulatory skills. What is a self-handicapping strategy? Self-handicapping is one form of an avoidant, or defensive behavior. Students with avoidant behaviors usually want to keep away from the situations in which they may be seen to have low ability, or in which failure is expected so that they can protect their self-worth and control negative affect (Covington, 1992; Rhodewalt & Vohs, 2005). Protecting self-worth rather than achievement is of eminent importance for them (Rhodewalt & Vohs, 2005). Similarly, self-handicapping behavior involves avoiding circumstances where potential failure could be attributed to one's ability by creating obstacles in advance to successful performance on a task that the individual considers important (Pintrich, 2000; Rhodewalt & Vohs, 2005). That is, if individuals fail, they can attribute failure to ready-made obstacles and protect their self-worth; if they succeed, the self-worth enhances as they did well despite the obstacles. Examples of self-handicapping behavior include deliberately reducing effort, fooling around the night before a test, and consuming alcohol prior to performance.

Accordingly, the premise underlying procrastinating behavior from this perspective is that people may procrastinate in order to provide an alternative reason for expected failure, thereby protecting their self-worth. To test this premise, Ferrari and Tice (2000) conducted two studies. In the first study, undergraduate students were given a 15-minutes test-preparatory period

right before a math test and the time spent on practicing math problems and other activities unrelated to math was recorded. It was found that procrastination was negatively related with time spent on math problems but positively with other activities, confirming that procrastinators tend to avoid working on an important task (i.e., math problems). However, the researchers speculated whether the observed result was due to the importance of the task or the evaluative characteristics of the target task. Thus, in the second study, Ferrari and Tice further examined the effects of evaluative situations on procrastination. They hypothesized that if procrastinators spent less time practicing math problems only under an evaluative condition, then procrastinating served as a self-handicap. Their assumption was supported. The results revealed that procrastination was negatively associated with time spent on the math problems and positively associated with time spent on irrelevant tasks only when the test was described as evaluative; when the same test was presented as fun as game, procrastination did not correlate with time spent on either of the activities. This study, in short, supports that procrastinators tend to delay their work only when there is a threat of their low ability being revealed. In other words, it is likely that procrastinators engage in procrastination in order to protect their self-worth, thus implying that procrastination serves as a self-handicapping strategy.

Similar results were reported in Senecal et al. (1997). High procrastinators in the study took longer to begin the task and failed to complete the task in a given time when they expected evaluation, especially performance-based evaluation; on the other hand, low procrastinators were less likely affected by the anticipation of evaluation. In fact, the review of literature by Ferrari et al. (1995) reported that chronic procrastinators were highly concerned with their self-image and tried to avoid situations that may affect their image negatively. These studies address that procrastinators are more prone to demonstrate behaviors that are favorable to their self-worth.

Considering procrastination a self-handicap could be also inferred by the findings that procrastination is positively associated with fear of failure or anxiety (Alexander &

Onwuegbuzie, 2007; Haycock et al., 1998; Milgram et al. 1995; Saddler & Buley, 1999; Solomon & Rothblem, 1984; Steel, 2007; van Eerde, 2003). To explain this, people who easily experience fear of failure or anxiety would be more drawn to create alternative reasons for an expected failure, thus engaging in procrastinating behavior as a self-handicap. A negative relationship between self-efficacy and procrastination may also provide further evidence for this perspective as people with low self-efficacy would be more susceptible to fear of failure (Ferrari et al., 1992; Haycock et al., 1998; Sirois, 2004; Steel, 2007; van Eerde, 2003). Additionally, several studies have reported a strong correlation between procrastination and self-handicapping (Ferrari, 1991; Steel, 2007; van Eerde, 2003). All these findings, when considered together, intimate that procrastination may be used as a self-handicapping strategy.

However, debate remains as to whether procrastination is indeed a self-handicapping strategy. If so, such behavior is done purposefully to protect one's self-worth and should not be considered an irrational delay. Further, procrastinators should experience fear of failure. However, the literature does not consistently support that procrastinators do so. For example, a meta-analysis by van Eerde (2003) reported only a small correlation between fear of failure and procrastination. Schouwenburg (1995) also reported that procrastination and fear of failure were unrelated. He further posited that students' report of fear of failure as a reason for procrastination (e.g., Alexander & Onwuegbuzie, 2006; Solomon & Rothblem, 1984) is simply an excuse for procrastinating behavior. Such limited evidence for correlation between procrastination and fear of failure may weaken the argumentation that procrastination itself is a self-handicapping.

There were notable findings that have, in fact, distinguished procrastination from self-handicapping. Lay, Knish, and Zanatta (1992) conducted two studies and compared self-handicappers and procrastinators. In both studies, they operationally defined self-handicapping behavior as fewer practice items answered, less self-reported percentage of time spent on the relevant task, and less self-reported concentrated effort in practice. Procrastinating behavior was

measured by the date students started practice, converted to the number of days before a test. In the first study, students were given forty minutes in class to work on practice items for an upcoming test in two days. While high self-handicappers practiced less items and reported spending less time on the task than low self-handicappers, high and low procrastinators were not different in terms of either the number of items practiced or time spent on the task. However, in the second study, participants were allowed to take a practice booklet home to prepare for a test given five days later. Different from the first study, both high self-handicappers and high procrastinators reported starting later than low self-handicappers and non-procrastinators. In sum, both self-handicappers and procrastinators exhibited dilatory behavior (i.e., procrastination) when such behavior is available, but only self-handicappers (and not procrastinators) engaged in other self-handicapping behavior such as reduced effort or decrease in practice under the circumstances in which dilatory behavior is not an option.

The finding from this Lay and colleague's (1992) study suggests that the same behavior by self-handicappers and procrastinators may be related to different purposes for each group. For example, Lay et al. posited that dilatory behavior may serve as an excuse for expected failure for self-handicappers whereas the same behavior for procrastinators may simply represent a behavior of avoiding an aversive task. Other researchers similarly suggested that academic procrastination may simply be a general tendency or a trait to postpone achieving some unappealing goal rather than an avoidant behavior as a result of fear of failure (Lay, 1986; Schouwenburg, 1995).

Active procrastination

While most researchers have viewed procrastination as an undesirable behavior, some have suggested, as noted earlier, that procrastination could be an adaptive behavior. Recently, Schraw et al. (2007) conducted a qualitative study of college students' procrastination and

examined adaptive aspects as well as maladaptive aspects of academic procrastination. From students' reports, the researchers identified two main beneficial aspects of procrastination. The first is cognitive efficiency. Students reported that working in a tightly controlled time led to concentrated effort and eliminated distractions. The second benefit is peak experience. This reported benefit is that working in short intervals enhances motivation, makes boring tasks more engaging and challenging, and leads to a sustained state of "flow." Most of the students interviewed in this study reported that they plan to procrastinate for such adaptive reasons. This comment demonstrates *active procrastination* introduced by Chu and Choi (2005).

Chu and Choi asserted that active procrastinators choose to or plan to procrastinate so that they work more efficiently and achieve their best performance whereas others do not deliberately procrastinate but end up delaying tasks, which Chu and Choi referred to as *passive procrastination*. While passive procrastinators feel overwhelmed and become pessimistic in their outlook as the deadline approaches, active procrastinators enjoy working and feel challenged and motivated under pressure (p.247). According to Chu and Choi's study, active procrastinators used time more purposively, had greater perception of time control, showed higher self-efficacy, and used adaptive coping strategies (e.g. task-oriented strategies) compared with passive procrastinators. Similarly, Schraw et al. (2007) found that students who reported to plan to procrastinate had a high level of satisfaction in achievement and a high sense of academic self-efficacy. They also reported that they were able to learn more efficiently by procrastinating and they believed procrastination had little or no impact on the quality of their work.

In contrast to the earlier stance on procrastination as a maladaptive behavior, this view of procrastination as planned delay rather demonstrates a successful self-regulatory process. Indeed, participants in Schraw et al. (2007)'s study were successful college students and Chu and Choi (2005) also reported that active procrastinators demonstrated high academic achievement. Furthermore, some research concluded that high ability students procrastinated more than low

ability students and procrastination increased as students moved up to higher grades in school (Ferrari, 1991). All of these studies imply that some students perceive procrastination as beneficial and that they may intentionally procrastinate for such adaptive functions of procrastination. These findings also suggest that there may be different types of procrastination with different functions, as some researchers believe (e.g. Chu & Choi, 2005; Schraw et al., 2007; Steel, 2007). Nevertheless, it is debatable whether active procrastination should be considered procrastination because it involves purposeful or planned delay with a rational reason, which is to maximize performance. In the current study, we explored whether students view planned delay as procrastination and whether students display active procrastination.

The current study

Although many researchers suggest that procrastination is a failure of self-regulation, few studies have examined procrastination explicitly in relation to models of self-regulation. Two recent studies were designed to understand procrastination from a self-regulated learning perspective (Howell & Watson, 2007; Wolters, 2003). In Wolters' study, students' goal orientation, academic efficacy beliefs, and their use of cognitive and metacognitive learning strategies were examined as predictors of academic procrastination using several self-report instruments. Administering self-report surveys as well, Howell and Watson examined the relations among procrastination, achievement goal orientations, and learning strategies. These studies represent the very few studies that explicitly examined learning strategies and goal orientations in relation to academic procrastination. Taking into account that the models of self-regulated learning include motivational as well as cognitive and metacognitive processes (Pintrich, 2000; Zimmerman, 2000), further procrastination research examining those variables is warranted to better understand a relationship between procrastination and self-regulated learning.

In addition to a lack of research from a self-regulated learning perspective, previous research on academic procrastination, especially in relation to motivational constructs, has produced mixed results. For example, although many studies reported that procrastination is negatively associated with self-efficacy, some studies still failed to find such a relationship (Milgram et al., 1995; Saddler & Buley, 1999). In Milgram and his colleague's study, the researchers measured perceived task capability by asking students whether they felt capable of doing the academic task on which the students were asked to rate their tendency to procrastinate. The study reported that students' perceived task capability was negatively related only to the degree to which delaying on the task is a problem (i.e., students were more upset about delay on tasks they believed they could handle), but not directly to students' procrastination tendency on the same task. Similarly, Saddler and Buley reported that self-efficacy for learning and performance was not a significant predictor of academic procrastination. Furthermore, as noted earlier, goal orientations and self-handicapping are other variables whose relationship with procrastination also remains obscure.

As such, the current research purports to study the motives and attributions for students' academic procrastination in relation to self-regulatory processes. We examined antecedents and correlates of procrastination and simultaneously considered cognitive, metacognitive, motivational, and behavioral aspects of procrastination following models of self-regulated learning. We also explored the presence of and students' perceptions of active procrastination and looked for whether active procrastinators, if there are any, demonstrate different motives and attributions for their procrastination. The current study, therefore, extends previous research by providing a better understanding of the nature of academic procrastination and perhaps why some students would be prone to procrastinate.

The current research employed a mixed-methods design. Most of the existing procrastination research relies on self-report measures. However, as definitions of procrastination

vary, different self-report instruments also assess behavior differently based on how they define procrastination. Findings from the existing research, then, may be biased and lack generalizability. Furthermore, procrastination is an intra-individual process that may involve complex underlying motivations; thus, findings from self-report measures alone likely constrain understanding of the complete nature of procrastination. Therefore, we collected both quantitative and qualitative data in the current study and triangulated the resulting data.

For quantitative data, several self-report survey instruments were administered assessing the degree of students' academic procrastination and their motivational and self-regulatory processes. Using the survey data, relationships among academic procrastination and students' regulatory and motivational functioning were examined. Also, differences between high and low procrastinators were examined with respect to their self-regulation and motivation in academic settings. Concurrent with the survey data, qualitative data were derived from individual and focus group interviews. During the interviews, participants were asked several questions and follow-up prompts regarding their academic and procrastinating behaviors. The interview data focused on examining differences in academic behaviors between high procrastinators and low procrastinators in greater depth, focusing on their perceptions of and their reasons for procrastination. This mixed-methods approach, therefore, allowed us to deeply explore individual differences and intra-individual processes among procrastinators.

Research questions

This study focused on self-regulatory and motivational nature of academic procrastination. To this end, using quantitative data, relations between procrastination and various motivational and regulatory variables were examined. This study also examined differences in dependent measures between high and low procrastinators with respect to their self-regulated

learning and academic motivation. This analysis helped to further study the salient characteristics of high procrastinators compared with low procrastinators and complemented the interview data. With interview data, we were interested in exploring students' perceptions of procrastination motivation including potential self-handicapping function and active, or intentional, procrastination. Specifically, the following research questions were addressed:

1. What is the relationship between academic procrastination and self-regulated learning?
2. What are the differences between high procrastinators and low procrastinators regarding cognitive, metacognitive, motivational, and behavioral learning processes?
3. Do students engage in procrastination as a self-handicapping behavior?
4. Do students purposefully procrastinate with intent to (academically) perform better?

What is the relationship between academic procrastination and self-regulated learning process? Based on previous research that suggested procrastination involving failure in self-regulation, a negative relationship was expected between characteristics of a self-regulated learner and academic procrastination. Therefore, it was expected that academic procrastination would be inversely associated with intrinsic goal orientation, self-efficacy, and learning strategy use including cognitive, metacognitive, and behavioral strategies. Further, it was expected that academic procrastination would be positively correlated with test anxiety and extrinsic goal orientation. Given that procrastination could be used as a self-handicapping strategy, some positive relationship between academic procrastination and self-handicapping was also expected.

What are the differences between high procrastinators and low procrastinators regarding cognitive, metacognitive, motivational, and behavioral learning processes? Again, it was expected that high procrastinators would demonstrate contrast characteristics of a self-regulated

learner. Specifically, we expected that high procrastinators would be less likely to display intrinsic goal orientation, self-efficacy and learning strategy use than low procrastinators. In contrast, high procrastinators would have higher tendency to demonstrate test anxiety, extrinsic goal orientation, and self-handicapping strategies.

Do students engage in procrastination as a self-handicapping behavior? As noted earlier, there is ongoing debate whether procrastination is a self-handicapping strategy, and correlational results can not clearly answer this research question. Thus, we did not make a clear prediction on this issue other than a positive relationship between procrastination and self-handicapping behavior. To address this research question further, accordingly, the interview data were analyzed.

Do students purposefully procrastinate with intent to (academically) perform better? We were interested to see, during the interview, whether students indeed reported intentional delay for adaptive purposes and/or whether they perceived such behavior as procrastination.

For the first two research questions, we considered procrastination as unplanned, or maladaptive delay. However, academic procrastination was not explicitly defined during the study for the purpose of exploring students' definitions of procrastination and their perceptions of active procrastination. In addition to the four research questions above, we expected that the interview data would reveal similar motivational and behavioral patterns of high and low procrastinators to observed findings from the quantitative findings.

Chapter 2

Method

Participants

Participants in this study were 45 undergraduate students enrolled in two sections of an introductory development course at a large Mid-Atlantic university (Appendix A presents the recruitment statement and Appendix B provides a copy of the consent form given to participants). However, 4 students did not complete the survey items, and they were omitted. Thus, the total number of participants analyzed in the study was 41. Of the 45 students, 39 students participated in focus groups and 6 other participants were interviewed individually. Students were initially allowed to choose between focus group and individual interview sessions. None of them chose the individual sessions. For 6 designated time slots for focus groups, only one student attended. Each focus group consisted of between 2 and 7 students. All participants received extra credit points toward their course grade for participation in the study. Participants represented various majors including elementary education, secondary education, communication disorders, special education, human development and family studies, kinesiology and rehabilitation services.

Materials and measures

Quantitative data were collected using several self-report instruments in the study. For qualitative data, a partially-structured interview protocol was developed. Both forms of data were independent of each other.

Generalized Self-Efficacy Scale (GSES)

The GSES was originally developed in German and it has been translated into many languages (Schwarzer & Jerusalem, 1995). The English version was published in 1995 and slightly modified in 2000 (Scholz, Dona, Sud, & Schwarzer, 2002). As described in Chapter 1, self-efficacy is commonly regarded as domain-specific. However, the GSES was designed to assess a broad and global sense of personal confidence in one's coping ability across a wide range of demanding or novel situations (Schwarzer, Bäßler, Kwiatek, Schröder, & Zhang, 1997). It comprises 10 items and uses a 4-point Likert-type scale, ranging from 1 = *Not at all true* to 4 = *Exactly true*. Example items include, "*Thanks to my resourcefulness, I can handle unforeseen situations*" and "*I can always manage to solve difficult problems if I try hard enough.*" The scale was confirmed to be reliable, homogeneous, and unidimensional across 25 nations, and adequate internal consistency reliability for the English version of the GSES has been reported, $\alpha = .87$ (Scholz et al., 2002).

Motivated Strategies for Learning Questionnaire (MSLQ)

The MSLQ (Pintrich, Smith, Garcia, & McKeachie, 1991) is a widely used self-report instrument developed to evaluate college students' motivational orientations and their use of

different learning strategies. The scale has a total of 81 items divided into two sections, a motivation section and a learning strategies section. Two sections combined comprise fourteen subscales. Each subscale has been used independently.

The motivation section is composed of 31 items including five subscales: Intrinsic goal orientation, Extrinsic goal orientation, Task value, Control of learning beliefs, Self-efficacy for learning and performance, and Test anxiety. According to Pintrich et al. (1991), goal orientation refers to the students' perception of the reasons why students engage in an academic task. Students with intrinsic goal orientation believe that they participate in a task for reasons such as challenge, curiosity, or mastery whereas those with extrinsic goal orientation perceive themselves to be participating in a task because of grades, rewards, evaluation by others or competition. Task value assesses the degree to which students perceive that the task is interesting, important, and useful. Control of learning beliefs refers to students' beliefs that their effort to learn will bring positive outcomes. This concept is similar to that of locus of control. The higher score on this scale represents that students demonstrate internal locus of control. Self-efficacy for learning and performance scale assesses students' beliefs about their ability to accomplish a task. Compared to GSES, the self-efficacy subscale in MSLQ measures efficacy beliefs in a specific class. Lastly, Test anxiety scale assesses students' affective reaction to tests in a course.

The learning strategies section includes a cognitive strategies scale, a metacognitive strategies scale, and a resource management strategies scale. The cognitive strategies scale consists of four subscales and evaluates students' use of rehearsal, elaboration, organization, and critical thinking strategies. The metacognitive strategies scale assesses students' control of the cognitive learning processes, referring to planning, monitoring, and regulating. The resource management strategies scale refers to behavioral self-regulation strategies and comprises four subscales, which are Time and study environment, Effort regulation, Peer learning, and Help seeking. Time and study environment scale refers to planning and managing one's study time and

organizing one's study environment. Effort regulation scale assesses students' commitment to completing their goals in the face of distractions and uninteresting tasks. Peer learning and Help seeking both evaluate students' ability to manage outside resources for their academic achievement, such as collaborating with peers and asking others for help.

On the MSLQ, students were asked to respond to the items at the course level (i.e. domain-specific) and to rate each item on a 7-point Likert scale, ranging from 1 = *Not at all true of me* to 7 = *Very true of me*. Scales are obtained by summing all the items in each subscale. In previous research, Cronbach's alphas for the Motivational Scales ranged from .62 to .93 and for the Learning Strategies Scales from .52 to .80 (Pintrich et al., 1991). Pintrich et al. also reported that the MSLQ has moderate predictive validity and reasonable factor validity (p. 4).

Procrastination Assessment Scale – Student (PASS)

The 44-item PASS (Solomon & Rothblum, 1994) consists of two-parts. The first part of the scale evaluates the prevalence of procrastination in six academic areas: writing term paper, studying for an exam, keeping up with reading assignments, performing administrative tasks, attending meetings, and performing school activities in general. For each academic area, students completed three rating scales indicating the degree to which they procrastinate on the task (1= *Never procrastinate*; 5= *Always procrastinate*), whether procrastination on the task is a problem for them (1= *Not at all a problem*; 5= *Always a problem*), and whether they want to decrease their procrastination on the task (1= *Do not want to decrease*; 5= *Definitely want to decrease*).

According to Solomon and Rothblum (1984), to provide a measure of academic procrastination, the first 2 items are summed for each academic task with scores ranging from 2 to 10 as well as across the 6 areas with total scores ranging from 12 to 60. Higher scores indicate greater procrastination. Howell et al. (2006) reported an alpha coefficient of .75.

The second half of the PASS presents a scenario of procrastination at writing a term paper and a list of 26 potential reasons for procrastination on the task (e.g., “You had a hard time knowing what to include and what not to include in your paper”). For each of the reasons, students were asked to indicate the extent to which it reflects why they procrastinated on a five-point scale where 1= *Not at all reflects why I procrastinated* and 5= *Definitely reflects why I procrastinated*. In this study we computed, for each item, the percentage of participants who highly endorsed an item (i.e., marked 4 or 5 on a scale in which 1= *Not at all reflects why I procrastinated* and 5= *Definitely reflects why I procrastinated*) and examined which statements better represent students’ reasons for procrastination.

Self-Handicapping Scale (SHS)

The SHS (Jones & Rhodewalt, 1982) consists of 25 items and measures students’ propensity to use self-handicapping behavior. Students rated each item on a 6-point Likert-scale ranging from 0= *Disagree very much* to 5= *Agree very much*. Example items include, “*I sometimes enjoy being mildly ill for a day or two because it takes off the pressure.*” and “*I admit that I am tempted to rationalize when I don’t live up to other’s expectations.*” There was one item in the scale which demonstrates directly to procrastination behavior (i.e., “I tend to put things off until the last moment”), and this item was omitted for data analyses to enhance the ability to separate assessment of procrastination and self-handicapping. Thus, possible scores on the SHS ranged from 0 to 120. The scale yielded acceptable internal consistency (Cronbach’s alpha= .79) and stability (test-retest reliability= .74) when administered in large group-testing sessions (Rhodewalt, 1990).

Self-Worth Protection Scale (SWPS)

The SWPS (Thompson & Dinnel, 2003) was developed based on the self-worth theory. According to the self-worth theory, some students underachieve only when there is a threat that poor performance is expected to reveal low ability; but, they try their best when there is no such threat and poor performance can be attributed to a factor unrelated to ability. Students with such different performances under high-versus-low evaluative situations are referred to as self-worth protective (Thompson & Dinnel, 2003). This construct is closely related to the concept of “failure-avoiding” introduced by Covington & Omelich (1991). The SWPS, accordingly, purports to identify students who have higher tendencies to engage in defensive behaviors with the intention of protecting self-worth from the negative implications of failure. The SWPS was originally comprised of 44 items, but after factor analyses, the authors reduced the scale to 33 items, (Thompson & Dinnel, 2003). The revised scale was used in this study. Students indicate the degree to which they agreed with each statement in a 7-point Likert-scale ranging from 1= *Not very true of me* to 7= *Very true of me*. A typical item is “*I perform at my best when there is little risk of failure.*” Thompson and Dinnel reported internal consistency of .89 and test-retest reliability of .92 over a two week interval.

Test Anxiety Measure

Sloan & Sperling (2005) developed the Test Anxiety Measure to evaluate students’ experience of stress about testing. The scale consists of 28 items that are divided into two parts. The first part is comprised of 2 items that assess students’ perception of test anxiety in relation to performance (e.g., Test anxiety helps me to do better on exams). The remaining 26 items describe situational statements that may be related to test anxiety and respondents rate the frequency of experiencing stress under each situation (i.e. 1 = *Never*, 2 = *Seldom*, 3 = *Sometimes*, 4 = *Often*,

and 5 = *Always*). Example items include, “*I feel stressed about how the test is going to affect my grade*” and “*I feel stressed when I have trouble on the first problem or item*”. Rectenwald’s study (2006) reported that the scale was reliable with Cronbach’s alpha of .91.

Interview protocol

A partially-structured interview protocol was used primarily as a guide and allowed for the interviewer to change and add questions (Krathwohl, 1998). The interview questions were open-ended and designed to acquire in-depth description of students’ academic and procrastinating behaviors (See Appendix D). All of the interviewees were first asked to describe a time they had procrastinated on academic task. This question was prepared to get participants involved in the topic as they explained their own experiences. The following questions were developed to explore students’ perceptions of and various potential reasons for academic procrastination. Sample questions were, “*How much did you care about the outcome or performance of your work (that you procrastinated on)?*” and “*Why do you think you procrastinated on this task?*”

Procedure

On the recruitment day, the researcher visited each class and explained briefly to students the purpose and procedure of the study. Students who wished to participate in the study voluntarily signed up for one of the interview sessions including focus group sessions and individual interview sessions. Focus group interviews were selected as a mechanism to encourage students to share their thoughts about academic procrastination and to respond to each other; thereby generating a richer dataset regarding procrastination tendencies. After signing up,

students received a packet of six questionnaires and a consent form and they were asked to complete the packet at home and to bring it back on the interview day.

The interviews were conducted in a small-sized classroom. When students came to interview sessions, the survey packet and the consent document were collected and the purposes of the study and the interview format were briefly explained. In the consent document, students were notified that they were free to end their participation at any time or to decline to answer any questions without penalty. Students were asked to use numbers, which were designated on their survey packet, and to refer their number whenever they made comments during the interview. All interview sessions were audio-recorded. Each interview lasted approximately 40 minutes and all sessions were completed within a 2-week time span.

Chapter 3

Results

Pearson's product moment coefficients were calculated on the survey data to examine relationships between academic procrastination and motivational and regulatory constructs. The sum scores of each scale were used for data analyses. Then, we classified participants into high and low procrastinators using a median split procedure as the PASS has no normative way to distinguish high and low procrastination. Participants whose PASS score was greater than or equal to 33 ($M= 38.55$, $SD= 6.38$, $n=22$) were classified as high procrastinators. Low procrastinators were those whose PASS score was less than 33 ($M= 28.42$, $SD= 3.37$, $n=19$). Mean scores of two groups in each scale was compared to examine group differences in cognitive, metacognitive, and motivational processes in academic performance.

As the interview data was to explore group differences between high and low procrastinators in depth, it was first checked whether students classified as high or low procrastinators viewed themselves as procrastinators. In order to capture more salient differences, only those students whose data from both the instrumentation and the interview consistently identified them with low or high procrastinators were included for further analyses. This resulted in 13 high procrastinators and 9 low procrastinators. The interviews were transcribed verbatim and were analyzed focusing on students' motivational and regulatory behaviors under academic settings. Themes were developed from these data using a memoing and coding process (Creswell & Plano-Clark 2007; Gay, Mills, & Airasian, 2006).

Results from analyses of the student survey data

Descriptive statistics and reliability coefficients for all scales are presented in Table 1. Most of the reliability coefficients are fairly consistent with or higher than those reported in previous studies. However, the goal orientation scales, task value scale, organization scale, and peer learning scale yielded lower reliability coefficients than previously reported.

Table 1. Descriptive statistics for all variables

Variable	M	SD	α
PASS	33.85	7.25	.86
Self-Handicapping	57.52	13.47	.77
Test Anxiety Measure	90.19	17.36	.91
Self-Worth Protective	74.78	12.49	.80
Gen. Self-Efficacy	31.34	4.55	.89
MSLQ			
Intrinsic goal	18.27	3.44	.64
Extrinsic goal	21.29	3.60	.48
Task value	32.28	4.97	.81
Cont. learn. beliefs	23.05	3.13	.60
Self-efficacy	45.62	6.41	.93
Test anxiety	19.16	6.06	.91
Rehearsal	20.05	4.63	.74
Elaboration	28.40	5.79	.75
Organization	16.66	4.43	.51
Critical thinking	19.18	5.28	.79
Metacog. self-regulation	54.30	10.61	.81
Time and study mgmt.	41.04	8.39	.84
Effort regulation	20.96	3.81	.71
Peer learning	8.33	3.58	.61
Help seeking	12.63	4.92	.70

Bivariate relations between procrastination and motivational and regulatory variables

The first goal of the study was to examine relationships between academic procrastination and students' motivational and regulatory processes. Table 2 reports the correlations among the examined variables. First, as predicted, scores on PASS correlated negatively with GSES scores ($p < .01$). However, PASS scores did not correlate with scores on the MSLQ self-efficacy scale. Also, as expected, intrinsic goal orientation was inversely related to PASS scores ($p < .05$). On the other hand, procrastination scores did not correlate with extrinsic goal orientation. The findings also show, as predicted, that procrastination scores had positive relationships with self-handicapping scores ($p < .001$) and self-worth protection scores ($p < .05$). Although PASS scores were not associated with either the Test Anxiety Measure or the MSLQ test anxiety scale, one of the PASS subscales measuring procrastination in studying for exams was positively correlated with scores on the Test Anxiety Measure ($r = .33, p < .05$). Among cognitive learning strategies, procrastination scores were inversely related only with rehearsal strategy ($p < .05$). In addition, as predicted, scores on PASS were negatively associated with metacognitive strategies ($p < .05$) and some of the behavioral regulatory strategies including time and study environment management ($p < .01$) and effort regulation ($p < .001$). Task value, Control of learning beliefs, Peer learning, and Help seeking did not correlate with PASS scores.

Table 2. Pearson correlations among variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PASS	-	.62**	.29	.33*	-.42**	-.35*	.13	-.25	.07	-.14	.26	-.32*	-.03	-.02	-.20	-.33*	-.48**	-.62**	-.03	-.08
Self-Handicapping		-	.40**	.42**	-.44**	-.41**	.16	-.14	.17	-.17	.42**	-.50**	-.01	-.09	-.05	-.26	-.56**	-.57**	-.19	-.03
Test Anxiety Measure			-	.41**	-.17	-.05	.35*	.15	.17	-.14	.54**	.04	.13	.13	.21	.04	-.02	.08	.08	.14
Self-Worth Protection				-	-.33*	-.16	.56*	.07	.24	-.04	.50**	.01	-.08	.12	.09	-.14	-.09	-.09	-.10	.12
Gen. Self-Efficacy					-	.55**	.08	.14	.13	.37*	-.11	.23	.08	.06	.29	.29	.37*	.20	.09	.07
MSLQ						-	.11	.42**	.06	.17	.08	.29	.30	.32*	.33*	.42**	.38*	.32*	.27	.04
Intrinsic goal							-	.24	.39*	.23	.32*	.25	.10	.24	.26	.09	.20	.13	.18	.18
Extrinsic goal								-	.17	.15	.16	.35*	.61**	.18	.49**	.57**	.46**	.39*	.25	.26
Task value									-	.51**	.19	.16	.01	.06	.19	.07	-.05	.13	-.19	-.31*
Cont. learn.beliefs										-	.12	.30	.19	.17	.07	.13	.36*	.26	-.17	-.40**
Self-efficacy											-	.04	-.03	.18	.12	.02	-.08	-.07	-.05	.08
Test anxiety												-	.23	.32*	.23	.51**	.69**	.59**	.46**	.30
Rehearsal													-	.38*	.48**	.63**	.37*	.23	.39*	.25
Elaboration														-	.07	.47**	.27	.26	.26	.00
Organization															-	.53**	.25	.09	.27	.18
Critical thinking																-	.62**	.45**	.56**	.36*
Metacog. self-regul.																	-	.72**	.36*	.27
Time and study mgmt.																		-	.22	.12
Effort reg.																			-	.66**
Peer learning																				-
Help seeking																				

* $p < .05$. ** $p < .01$

Group mean differences between high and low procrastinators

In order to address the second goal of this study, we compared high procrastinators and low procrastinators regarding mean scores of each scale. Due to a small sample size, here, we only analyzed the results using descriptive data. Table 3 shows means and standard deviations of two groups in each scale. Consistent with the findings from Pearson correlations, high procrastinators compared with low procrastinators demonstrated less use of some of the self-regulatory strategies including rehearsal, metacognitive self-regulation, time and study environment management and effort regulation. However, contrary to hypotheses, self-efficacy scores and goal orientation scores of high procrastinators were not greatly different from those of low procrastinators. As expected and consistent with the findings from Pearson correlations, high procrastinators displayed a greater tendency to self-handicap and to protect their self-worth compared with low procrastinators. High procrastinators, as also predicted, reported higher test anxiety on both the Test Anxiety Measure and the MSLQ subscale for test anxiety even though no significant correlation between PASS scores and scores on two test anxiety scales was found.

Table 3. Comparative means on variables between high and low procrastinators

	High procrastinators (N=22)			Low procrastinators (N=19)		
	M	SD	Observed range	M	SD	Observed range
Test Anxiety Measure	90.09	13.21	61.00-115.00	78.58	19.15	37.00-111.00
SHS	61.50	10.62	46.00- 87.00	46.37	9.88	19.00-63.00
SWPS	141.81	23.18	106.00-199.00	125.10	19.94	93.00-154.00
GSES	30.18	5.01	22.00-40.00	32.68	3.62	27.00-40.00
MSLQ						
Intrinsic goal	17.82	4.04	8.00-26.00	18.79	2.59	14.00-26.00
Extrinsic goal	21.68	3.76	15.00-27.00	20.84	3.45	15.00-26.00
Task value	31.91	5.07	22.00-40.00	32.71	4.96	22.00-42.00
Cont. learn. beliefs	22.82	3.20	16.00-28.00	23.32	3.11	17.00-28.00
Self-efficacy	44.14	7.06	23.00-52.00	47.34	5.23	36.00-56.00
Test anxiety	21.32	4.69	10.00-30.00	16.66	6.61	6.00-32.00
Rehearsal	28.50	4.36	6.00-24.00	21.84	4.37	11.00-28.00
Elaboration	28.55	5.00	20.00-39.00	28.23	6.73	19.00-41.00
Organization	16.59	4.52	10.00-25.00	16.74	4.45	8.00-24.00
Critical thinking	19.09	5.73	8.00-27.00	19.29	4.85	11.00-28.00
Metacog. self-regul.	51.64	10.68	32.00-72.00	57.39	9.91	35.00-76.00
Time and study mgmt.	38.55	8.90	18.00-54.00	43.92	6.89	30.00-56.00
Effort regulation	19.09	3.50	14.00-24.00	23.13	2.93	16.00-28.00
Peer learning	8.23	3.46	3.00-15.00	8.45	3.80	3.00-16.50
Help seeking	12.73	4.32	5.00-22.00	12.53	5.65	5.00-26.00

Reasons for procrastination

Additionally, we examined students' endorsement of reasons for procrastination in the second part of PASS. We constructed frequency tables (see Table 4) for each item, including the percentage of participants, high procrastinators and low procrastinators, who highly endorsed each item. Two highest endorsement rates of items were "You had too many other things to do (68.3%)" and "You felt overwhelmed by the task (56.1%)," both of which represent difficulties in managing time. The next highest endorsement item was "You really disliked writing term papers (53.6%)," which refers to task aversiveness. Also, laziness, "You just felt too lazy to write a term paper," was endorsed by 41.4% of participants.

Table 4. The percentage of high and low procrastinators who highly endorsed each item of PASS

	Total (N=41)	High procrast. (N=22)	Low procrast. (N=19)
19. You were concerned the professor wouldn't like your work.	7.3 %	9.1%	5.3%
20. You had a hard time knowing what to include and what not to include in your paper.	31.7%	36.4%	26.3%
21. You waited until a classmate did his/hers, so that he/she could give you some advice.	12.2%	18.2%	5.3%
22. You had too many other things to do.	68.3%	86.4%	47.3%
23. There's some information you needed to ask the professor, but you felt uncomfortable approaching him/her.	21.9%	27.3%	15.8%
24. You were worried you would get a bad grade.	19.5%	22.7%	15.8%
25. You resented having to do things assigned by others.	7.3 %	9.1%	5.3%
26. You didn't think you knew enough to write the paper.	24.4%	36.4%	10.5%
27. You really disliked writing term papers.	53.6%	59.1%	47.3%
28. You felt overwhelmed by the task.	56.1%	68.2%	42.1%
29. You had difficulty requesting information from other people.	7.3 %	7.3%	0%
30. You looked forward to the excitement of doing this task at the last minute.	4.9%	9.1%	0%
31. You couldn't choose among all the topics.	21.9%	31.8%	10.5%
32. You were concerned that if you did well, your classmates would resent you.	0%	0%	0%
33. You didn't trust yourself to do a good job.	7.3 %	9.1%	5.3%
34. You didn't have enough energy to begin the task.	31.7%	41%	21.1%
35. You felt it just takes too long to write a term paper.	26.8%	41%	10.5%
36. You liked the challenge of waiting until the deadline.	9.8%	18.2%	0%
37. You knew that your classmates hadn't started the paper either.	21.9%	27.3%	15.8%
38. You resented people setting deadlines for you.	2.4%	4.5%	0%
39. You were concerned you wouldn't meet your own expectations.	17.1%	27.3%	5.3%
40. You were concerned that if you got a good grade, people would have higher expectations of you in the future.	7.3%	9.1%	5.3%
41. You waited to see if the professor would give you some more information about the paper.	19.5%	22.7%	15.8%
42. You set very high standards for yourself and you worried that you wouldn't be able to meet those standards.	24.4%	36.4%	10.5%
43. You just felt too lazy to write a term paper.	41.4%	59.1%	21.1%
44. Your friends were pressuring you to do other things.	17.1%	22.7%	10.5%

When we examined endorsement of high and low procrastinators separately, both high (59.1%) and low procrastinators (47.3%) did not like writing assignments. However, high procrastinators were more likely to demonstrate poor time management. Especially, the item, “You had too many other things to do,” was endorsed by 86.4% of high procrastinators, as compared with 47.3% of low procrastinators. In addition, high procrastinators had stronger tendency to report laziness (i.e., “You just felt too lazy to write a term paper”) and lack of energy (i.e., “You didn’t have enough energy to begin the task”) as a reason for procrastination than low procrastinators. Similarly, high procrastinators seemed to have low tolerance as 41% of them highly endorsed an item, “You felt it just takes too long to write a term paper,” as compared with 10.5% of low procrastinators who endorsed the item highly. Interestingly, the item, “You liked the challenge of waiting until the deadline,” was endorsed by 18.2% of high procrastinators while none of low procrastinators highly endorsed the same item. Furthermore, high procrastinators were more likely to demonstrate higher endorsement on the items, such as “You were concerned you wouldn’t meet your own expectations” and “You set very high standards for yourself and you worried that you wouldn’t be able to meet those standards,” which refer to perfectionism, compared to low procrastinators.

Results from Analyses of the Student Interview Data

From the interview data, four themes emerged. These include a *lack of regulatory skills*, *working under pressure*, *defensive behaviors*, and *active procrastination*. Each of the themes in details is explained below.

A lack of regulatory skills

High procrastinators frequently mentioned that they were lazy. What they meant by being lazy was that they were not good at following their plans and intentions. Most high procrastinators responded that they usually planned to work in advance but ended up doing in the last minute. That is, they did not plan to procrastinate, but tend to put off what they had planned as they chose to engage in other events. The following extracts are the examples of how high procrastinators described their procrastinatory behavior:

I never plan to put stuff off, but it always just happens. Like I will do it a week in advance, but I never do. It just ends up.

I would say usually I plan ahead to do something. Like I'd say if I have a paper due on Friday, I plan to do on Wednesday. But when Wednesday comes, I am like I can do it later. And then, ... eventually I run out of ...

High procrastinators were also less capable of controlling their own behavior. They seemed to get easily distracted by other interesting activities and could not get themselves motivated to work as they planned. Most of them acknowledged that procrastination is not a good behavior and showed an intention to decrease such behavior because they believed that they would perform better without procrastination; nonetheless, they seemed to continue procrastinating. Some high procrastinators even believe that they cannot change their procrastinating behavior, reflecting external locus of control. The following extracts demonstrate lack of behavior regulation:

I think I did the same thing. I am lazy and I don't feel like doing it. So I pushed off until it has to be done. And then I just waste time even [though] still I am free.

I am also distracted with my roommates. And [that is] another reason why delaying doing work. There is always other stuff to do that is much more fun.

Every time this happens to me, I say "Next time, I need to change my habits." And then it comes around to me actually doing it, I still always put it off.

But I don't think that you can actually change. It is really difficult too, because every single year, I am just like, okay this year, I am going to do everything ahead, but it never happens.

On the other hand, low procrastinators seemed to schedule their work ahead of time taking into account other activities that they would have to be involved in. Low procrastinators ensured that they had enough time to complete a task and to carry out their schedule as planned. Low procrastinators, in general, reflected a good self-management in the face of distractions and have a high commitment to accomplishing their goals. The following remarks illustrate regulatory behaviors of low procrastinators:

I like to list everything I have to do everyday ... I pretty much schedule everything out for every single day. I leave time for most of my classes, and when I don't have something to do for that class, another class fills that time spot. I have things scheduled pretty much every hour of my day, so I have to have a time to do it.

I just think there is a lot of fun other things you could be doing most of the time. I know there is a lot of time I don't do stuff that could be a lot more fun but just do work.

I work forty plus hours a week so when I get time to do something, I sit down and just do everything I have to do even though it's like a week in advance, because if I am on call I could go to the work. So whenever I have a free minute, I make sure I get the work done and I try to do ahead of time ...

Working under pressure

Most low procrastinators reported that they get stressed out working under pressure, which is why they like to plan out ahead of time and work on an academic task in advance. However, many high procrastinators reported that they either work better under pressure or feel confident working under pressure. What they mean by saying working better under pressure was that they can stay focused on a task better when there is only limited amount of time otherwise they would get easily distracted. It did not necessarily seem to indicate that they will perform better. Rather, procrastinators acknowledged that they would do better quality work if they would not have procrastinated and be able to concentrate as they did when working under pressure. They denied that they procrastinate intentionally to work best under pressure, and some of them also mentioned that they just got used to working within a short period of time after a number of

instances of procrastination and thus they felt pretty comfortable working under pressure.

Nevertheless, they still reported experiencing stress or guilt during procrastination and regarded procrastination as a bad habit. Some example extracts are:

Yes. I think I am a procrastinator. But it works out because I do best some of work when I procrastinate.

I think I work a little bit better when there is more of a time limit. I obviously try to work faster. No breaks. Get right [done]. . . . I would not say I necessarily perform better. If I get myself focused earlier, then I would learn just as much as . . .

Interestingly, one student pointed out that she or other people speak about working best under pressure only to justify procrastination. She put it, "I can pretend as if I procrastinate because I work better under pressure. I do think I am more productive when I know I have to do something by certain point and I don't have so much free time. It motivates me to get everything done. . . . But, maybe, I am just trying to justify why I procrastinate. Trying to look better." She also said, "I don't think there is a benefit to procrastinate. I think that people just use as an excuse to say doing better under pressure." In short, procrastinators' common comment of working better under pressure may not refer to achieving better outcomes or intentional delay. It may only mean that they concentrate better on a task under a limited amount of time compared with when there is plenty amount of time left before the due date; or, it is simply an excuse for procrastination.

Defensive behavior

Some responses from high procrastinators reflected defensive, or self-protective behavior. The comment that procrastinators may justify their procrastination by saying that they work better under pressure is one example. That is, procrastinators protect their self-image from negatively being judged for procrastination. Another example of defensive behavior is provided by one of the focus group member who identified himself as a big procrastinator. He admitted that he set a lower academic standard. Setting a low goal may indicate that he tries to protect self-

esteem from failing to achieve a higher goal. At the same time, admitting a low academic standard itself could be another justification of procrastination. He said, “To me, if you pass the class, you kind of passed it and I am happy with it. I was capable of passing it and that was what I was looking for. So I achieved my goal.” He added that he did not recommend procrastination to those who want to strive to achieve as best as they can.

In relation to such defensive behaviors, some comments of high procrastinators implied a self-handicapping strategy. For example, one student, when asked how much she cared about performance on a task she had procrastinated, commented, “I actually care a lot about school work. That’s why I am a procrastinator.” This comment suggests that she kept delaying school work as she was afraid of failure. In addition, other student who said earlier that he set a low academic standard tended to attribute his poor performance to procrastination. He asserted a couple of times that he did have a capability to achieve better performance unless he had procrastinated. His remark implied that procrastination was the only impediment to his successful achievement. He put it:

When I see my results, I get mad at myself, because I knew it was a work that I was capable of doing and it was not overwhelming. I would have received better grade ... if I would have spent just a little bit of time and effort towards it. So I do look at that as slightly more motivation to do better next time because it gives me competence knowing that I am capable of doing this work: it wasn’t an exam I would have failed if I did try. It allows me to know that I am capable of doing coursework and just makes me realize that I need to spend a little bit more time next time.

Active procrastination

Among high procrastinators, there was one student who reported procrastinating on purpose, reflecting active procrastination. Whereas other procrastinators, according to her, usually say, “I have to do this but ...,” she rather chooses to put things off and does them in the last minute. She reported that she likes doing work at the last minute and being under pressure. She thought she works better under pressure. That is, she intentionally procrastinates because she can

focus and concentrate better on a task when there is a limited amount of time. She expressed strong confidence in working under pressure. She did not appear to feel anxious while procrastinating. She said it was because she knew that she can get it done on time. She also has never regretted procrastinating because she always ensures that she has enough time to get things done, and she always receives satisfying results. She seemed to demonstrate a tendency to work earlier on important tasks (e.g., assignments or tests in her major classes) compared with ones that she thought of as less worthy for her success in life (e.g., tasks in her general education courses).

The following extracts are from her responses during the interview:

I actually like doing things in the last minute. I do it on purpose because I usually focus more on a task and I think that I think better because since I do have a time limit ... I like to be under the pressure because I think better... I'd rather have a time limit because then I focus more. If I study two or three days before, I will study one section I will go and eat I go focus on something else. But when I do have a time limit, I am devoted to that particular task... because I know myself I am the type of student no matter what I will get things done despite when I do it or how I do it, I know I will get things done.

Chapter 4

Discussion, Implications, and Future research

The purpose of the current study was to understand the nature of academic procrastination in relation to self-regulation. Specifically, the study focused on examining the antecedents and reasons for students' procrastination from a self-regulated learning perspective. We employed both self-report instruments and semi-structured interviews and examined relationships between procrastination and motivational and self-regulatory constructs and students' motives and attributions for academic procrastination as well. As a whole, the results support the expectation that procrastination would be related to contrast characteristics of self-regulated learning. Findings also provide evidence for self-handicapping aspects of procrastination and intentional procrastination (or active procrastination).

In general, most procrastinators seemed to have a deficit in self-regulated learning. Bivariate correlations revealed that procrastination was correlated negatively with self-efficacy, intrinsic goal orientations, metacognitive learning strategies, and behavioral self-regulation strategies. That is, procrastinators seem to be less confident in their academic success, less likely to engage in a task for their own interest, and less likely to employ regulatory learning strategies. Group mean difference results also presented a lower tendency to use self-regulatory learning strategies among high procrastinators compared with low procrastinators. However, self-efficacy and goal orientations of high procrastinators, contrary to hypotheses, did not greatly differ from those of low procrastinators. Such results may be attributable to a small sample size. It is possible that the sample was not big enough to detect differences in these constructs between two groups while a pattern of the expected relationships with procrastination was observed.

Based on the survey data, procrastination, specifically, was most strongly, negatively, related to effort regulation strategy use and time management among all the self-regulated learning variables examined in the study. The interview data confirmed this result revealing that high procrastinators were more likely to report difficulty in following their plans and to become easily led into distractions such as more interesting tasks whereas low procrastinators reported cautious scheduling beforehand and well-planned time use. Group mean difference also showed a tendency of high procrastinator's deficit in effort regulation and time management compared with low procrastinators. Indeed, most high procrastinators highly endorsed an item implying a lack of time management (i.e., having too many other things to do) as reasons for procrastination. Also, high procrastinators compared with low procrastinators showed a greater tendency to report laziness, lack of energy, and low tolerance. All these findings suggest that procrastinators are less capable of managing their time, effort, and attention in the face of distractions and do not have a strong goal commitment.

According to the interview data, most of the high procrastinators reported to work better under pressure. They said that they stay focused better on a task and get themselves more motivated to complete the task when there is only a limited amount of time before the due date. These comments represent beneficial aspects of procrastination that were identified in Schraw et al.'s (2007) study (i.e., cognitive efficiency and peak experience). Nevertheless, those high procrastinators, except one, in the current study did not report that they plan to (or intentionally) procrastinate for such benefits. These comments indicate that they are not active procrastinators. If they were active procrastinators, they should have demonstrated strong competence for achieving academic success after procrastinating. However, high procrastinators rather admitted that they would have achieved better if they have spent more time on the task. For the current participants, working better under pressure seems to refer to nothing more than enhanced concentration and it is not necessarily related to better performance. In other words, after a

considerable period of delay, procrastinators cannot but get themselves to stay on a task under a very limited time period before the due date; still, they recognize that they come short of time and that they could accomplish better quality work with more time. Students may perceive such experience as a benefit of procrastination. They may even come to believe that they work better under pressure after a number of instances of procrastination. Another possibility is also provided from the interview. That is, claiming such benefits of procrastination could be simply an excuse for their unplanned procrastination. Procrastinators may pretend to work better under pressure in order to justify their 'undesirable' behavior. Overall, it seems that working better under pressure reported by procrastinators in this study was meant in a different sense from what was found in the previous studies. The claimed benefits of procrastination by procrastinators rather signified the consequences of procrastination, instead of the motives for procrastination.

In relation to the third research question, our results imply that procrastination may serve as a self-handicapping strategy. Consistent with previous findings, procrastination was strongly, negatively correlated with self-handicapping behavior and high procrastinators were more likely to engage in self-handicapping behavior than low procrastinators. Besides, procrastinators' higher test anxiety provides additional support for considering procrastination as a self-handicap. That is, as previously discussed, people who experience greater anxiety (or, fear of failure) are more likely to attempt to avoid the situations in which their ability would be attributed to failure by self-handicapping. In this case, self-handicapping behavior takes a form of procrastination. In other words, self-handicapping, or procrastination, is a coping, but defensive, strategy for students who frequently suffer fear of failure. One interviewee student indeed hinted that she procrastinated because of fear of failure. Furthermore, a strong relationship between procrastination and self-worth protective behavior further evidences a defensive function of procrastination (i.e. procrastinators are more likely to engage in defensive behaviors besides self-handicapping). Indeed, the interview data also provided the support for procrastinators' defensive

behaviors. As noted earlier, for example, some procrastinators try to defend their procrastinating behavior by pretending to work better under pressure. Another student during the interview kept defending that he was competent enough to perform better unless he had not procrastinated. That is, he appeared to attribute his unsuccessful achievement to his procrastination, thereby protecting beliefs about his competency. He also seemed to engage in other defensive or protective behaviors such as setting low academic goals. In short, our findings suggest that procrastinators are very concerned with protecting their self-worth and thus their procrastinating behavior is used for such defensive purposes, which is a self-handicapping strategy.

However, it is still unclear to conclude that procrastination itself is a self-handicapping technique. As we have seen, the findings in the study also yielded different possible motives for students' academic procrastination such as low capability of regulating their own learning and behavior. Additionally, some high procrastinators during the interviews demonstrated work avoidance goal orientation. That is, they did not like to engage in any burdensome work and tended to work on easier and more interesting tasks first. They were more concerned of getting work done than doing a quality job. As Lay et al. (1992) suggested, thus, some people may engage in procrastination simply to avoid a task deemed aversive. It is also possible that procrastination represents simple avoidance of pressure and anxiety (Thompson & Dinnel, 2007). In short, some of the results provided additional support for a view that procrastination is a self-handicapping strategy; nevertheless, we cannot ignore other possible explanations for students' procrastination that are also suggested based on adequate empirical evidence.

On the other hand, contrary to a majority of procrastinators, there was one student who reported to deliberately choose to procrastinate and work under pressure. She exhibited characteristics of active procrastinators that described in Chu and Choi's (2005) study. Like other high procrastinators, she reported to concentrate better on a task under a limited amount of time; unlike other procrastinators, however, she intentionally plans to procrastinate in order to have

such benefits of procrastination. Although some researchers do not acknowledge a planned delay as procrastination (van Eerde, 2003; van Hooft et al, 2005), she considered herself as a procrastinator. She did not view her procrastination as a bad habit but rather as a purposeful strategy to work more effectively. She seemed to have good control and use of time and expressed strong motivation and confidence with last-minute tasks. She reported that she has not nearly felt any negative affection such as anxiety and guilt for procrastinating. Her comments, therefore, evidenced the presence of an active procrastinator.

In the future research, it is necessary to examine procrastination differentiating those who plan to procrastinate and those who do not. From our data, it was found that students perceived themselves as procrastinators regardless of whether they had planned or not, but they seemed to represent different motives for engaging in procrastination. As such, examination of procrastination without distinction between two types of delay would confound results and fail to capture different motivations of procrastination. However, most of the past research did not make such distinction. Existing self-report measures of procrastination are also generally designed only for procrastination that is not planned (i.e., “irrational delay”). Therefore, future work should not only determine whether planned delay is considered as procrastination but also independently examine different delays.

Further exploration regarding the benefits of procrastination is also necessary. Although procrastinators in the current study reported to work better under pressure, they did not seem to procrastinate for such benefits and/or to achieve satisfactory results. This finding is different from what was observed in Schraw and his colleagues’s study (2007) in which procrastinators procrastinated for adaptive reasons and demonstrated a high level of satisfaction and achievement. One possibility is different samples. Participants in Schraw et al were successful procrastinators who reported to plan to procrastinate, whereas most students in the current study did not procrastinate intentionally. Again, this points out the importance of distinction between planned

and unplanned procrastination. In addition, while claiming benefits of procrastination, procrastinators in this study still acknowledged the advantages of working in advance over that of working in the last minute. This is somewhat contradictory. As previously discussed, such claimed benefits of procrastination may be nothing more than just an excuse or a byproduct after a long delay. Additional work, thus, should be able to explain whether procrastination could be truly beneficial to students' learning through examination of the nature of the reported benefits of procrastination.

In addition, future research will need to investigate potential varying functions of procrastination. In the current study, it is suggested that people engage in procrastination for different reasons. Some displayed a failure in self-regulated learning and others represented it as a self-handicapping strategy. It is also suggested in previous procrastination research that some contextual factors (i.e., task aversiveness) may influence such behavior. Thus, future research should uncover the multiple reasons for academic procrastination and provide which reasons are best attributable to procrastination in different circumstances. This work will help to further develop a process model or theory of academic procrastination.

Similarly, additional work that addresses self-regulated learning variables simultaneously in relation to academic procrastination is warranted. Not only are there few studies that examined such constructs but also the findings are mixed. We did not find any relationship between procrastination and extrinsic goal orientation although Wolters (2004) reported a positive relationship with performance-approach goal orientation and procrastination. It should be also noted that PASS scores in the current study only correlated with GSES scores but not with MSLQ self-efficacy scores. We expected, however, a negative relationship in both cases. In part, it is because MSLQ self-efficacy was measured in a class-specific level while the other two scales assessed a general tendency in an overall academic setting. Subsequent work, therefore, should

adopt the variables at a domain specific level to reveal more accurate relationships between these constructs.

In conclusion, the present study contributed to existing procrastination research in several ways. First, it examined procrastination with variables emphasized in models of self-regulated learning and provided support for a view that procrastination represents a failure in self-regulated learning. Second, findings further revealed defensive or self-handicapping motivation of procrastination. Third, results provided additional evidence of intentional procrastination, or active procrastination. Last, our qualitative interview data enabled the detailed exploration of procrastinators' behaviors and underlying multiple motivations of procrastination.

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Appendix A

Recruitment Statement

I am here today to recruit you to participate in a research study that examines students' procrastination. If you decide to participate, you will be asked to complete a couple of self-report surveys about procrastination and motivation, and complete a brief individual or focus group interview. Participation in the study is voluntary but most who participate find the study to be an interesting opportunity to think and talk about procrastination.

To participate, you must sign up for one of the following times, come to the specified room in the CEDAR building designated for the time you have selected, and complete the study. Your interview will be audio-recorded but no video recordings or personal identifiers will be requested. The study session will take about 50 minutes to complete. You must be 18 years of age or older to participate.

You will receive 3 extra credit points for participating in this study. If you would rather not participate in the study, you may also receive extra credit by writing a 3-page summary review of a research article on the topic of College Learners' Procrastination. If you have any questions about the study, you may contact either Dr. Rayne Sperling at rsd7@psu.edu or Won Park sup164@psu.edu.

Appendix B

Informed Consent Form

INFORMED CONSENT FORM FOR SOCIAL SCIENCE RESEARCH

The Pennsylvania State University

Title of Project: Procrastination in Academic and Non-Academic Settings

Principal Investigator: Rayne A. Sperling, Ph.D.

Other Investigator(s): Seung Won Park, Amanda L. Hall, Crystal Ramsay, M.Ed., Ya-Ling Lan, MS

This study is to explore when and why people procrastinate and how they feel about procrastinating. If you agree to participate, you will be asked to come to one of the specified conference rooms at a specified time, complete a couple of self-report surveys about procrastination and motivation, and complete a brief individual or focus group interview. If you speak about the contents of the focus group outside the group it is expected that you will not tell others what individual participants said. The interviews will be audio recorded. The tapes of these recordings will be kept in Dr. Sperling's office, without identifying information, only until they are transcribed by one of the research team members. Nobody else will have access to the audio tapes. As soon as they are transcribed they will be destroyed.

The session should take about 50 minutes. You will receive 3 extra credit points for your participation. If you decide not to participate in this study your grade will be unaffected. You may also request to do a 3-page article summary instead of participating in the study to earn the 3 extra credit points. The reviews will be collected from a member of the research team who is not your instructor.

The information generated from this study will be used to inform other researchers and teachers about students' procrastination tendencies.

You may ask any questions that you have about the research procedures by contacting Dr. Rayne Sperling at 232 CEDAR Building, 814-863-2261, rsd7@psu.edu. Your participation is confidential. Only research team members will have access to the information, and your instructor will not know who participated in the study or who did the alternate project. Additionally, all personal identifiers will be replaced with code numbers, so that no confidential information will be stored.

Your participation in this study is voluntary. You are free to withdraw from the research at any time or to decline to answer any questions without penalty. You will still receive the extra credit.

You will be given a copy of this consent form to keep for your records. You must be 18 years or older to participate in this study.

- _____ I **give** my permission to be **AUDIO** taped.
- _____ I **do not give** my permission to be **AUDIO** taped.

- _____ I **do give** my permission for portions of this interview to be directly quoted in publications/presentations.
- _____ I **do not give** my permission for portions of this interview to be directly quoted in publications/presentations.

Participant Signature

Date

I, the undersigned, verify that the above informed consent procedure has been followed.

Investigator Signature

Date

Appendix C

Measures

Generalized self-efficacy scale*

1 = Not at all true 2 = Hardly true 3 = Moderately true 4 = Exactly true

- | | | | | |
|--|---|---|---|---|
| 1. I can always manage to solve difficult problems if I try hard enough. | 1 | 2 | 3 | 4 |
| 2. If someone opposes me, I can find the ways and means to get what I want. | 1 | 2 | 3 | 4 |
| 3. I am certain that I can accomplish my goals. | 1 | 2 | 3 | 4 |
| 4. I am confident that I could deal efficiently with unexpected events. | 1 | 2 | 3 | 4 |
| 5. Thanks to my resourcefulness, I can handle unforeseen situations. | 1 | 2 | 3 | 4 |
| 6. I can solve most problems if I invest the necessary effort. | 1 | 2 | 3 | 4 |
| 7. I can remain calm when facing difficulties because I can rely on my coping abilities. | 1 | 2 | 3 | 4 |
| 8. When I am confronted with a problem, I can find several solutions. | 1 | 2 | 3 | 4 |
| 9. If I am in trouble, I can think of a good solution. | 1 | 2 | 3 | 4 |
| 10. I can handle whatever comes my way. | 1 | 2 | 3 | 4 |

Note: The English version was developed in 1985, published in 1995, and revised slightly in 2000 Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. In J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio* (pp. 35-37). Windsor, UK: Nfer-Nelson.

MSLQ

PART A (MOTIVATION)

The following questions ask about your motivation for and attitudes about this class. Remember **there are no right or wrong answers, just answer as accurately as possible**. Use the scale below to answer the questions. If you think the statement is very true of you, mark 7; if a statement is not at all true of you, mark 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

	Not at All True of Me						Very True of Me
	①	②	③	④	⑤	⑥	⑦
1. In a class like this, I prefer course material that really challenges me so I can learn new things	①	②	③	④	⑤	⑥	⑦
2. If I study in appropriate ways, then I will be able to learn the material in this course	①	②	③	④	⑤	⑥	⑦
3. When I take a test I think about how poorly I am doing compared with other students	①	②	③	④	⑤	⑥	⑦
4. I think I will be able to use what I learn in this course in other courses	①	②	③	④	⑤	⑥	⑦
5. I believe I will receive an excellent grade in this class	①	②	③	④	⑤	⑥	⑦
6. I'm certain I can understand the most difficult material presented in the readings for this course	①	②	③	④	⑤	⑥	⑦
7. Getting a good grade in this class is the most satisfying thing for me right now	①	②	③	④	⑤	⑥	⑦
8. When I take a test I think about items on other parts of the test I can't answer	①	②	③	④	⑤	⑥	⑦
9. It is my own fault if I don't learn the material in this course	①	②	③	④	⑤	⑥	⑦
10. It is important for me to learn the course material in this class	①	②	③	④	⑤	⑥	⑦
11. The most important thing for me right now is improving my overall grade point average, so my main concern in this class is getting a good grade	①	②	③	④	⑤	⑥	⑦

		Not at All True of Me					Very True of Me	
12.	I'm confident I can learn the basic concepts taught in this course	①	②	③	④	⑤	⑥	⑦
13.	If I can, I want to get better grades in this class than most of the other students	①	②	③	④	⑤	⑥	⑦
14.	When I take tests I think of the consequences of failing	①	②	③	④	⑤	⑥	⑦
15.	I'm confident I can understand the most complex material presented by the instructor in this course	①	②	③	④	⑤	⑥	⑦
16.	In class like this, I prefer course material that arouses my curiosity, even if is difficult to learn	①	②	③	④	⑤	⑥	⑦
17.	I am very interested in the content area of this course	①	②	③	④	⑤	⑥	⑦
18.	If I try hard enough, then I will understand the course material	①	②	③	④	⑤	⑥	⑦
19.	I have an uneasy, upset feeling when I take an exam	①	②	③	④	⑤	⑥	⑦
20.	I'm confident I can do an excellent job in the assignments and tests in this course	①	②	③	④	⑤	⑥	⑦
21.	I expect to do well in this class	①	②	③	④	⑤	⑥	⑦
22.	The most satisfying thing for me in this course is trying to understand the content as thoroughly as possible	①	②	③	④	⑤	⑥	⑦
23.	I think the course material in this class is useful for me to learn	①	②	③	④	⑤	⑥	⑦
24.	When I have the opportunity in this class I choose course assignments that I can learn from even if they don't guarantee a good grade	①	②	③	④	⑤	⑥	⑦
25.	If I don't understand the course material, it is because I didn't try hard enough	①	②	③	④	⑤	⑥	⑦
26.	I like the subject matter of this course	①	②	③	④	⑤	⑥	⑦

		Not at All True of Me					Very True of Me	
27.	Understanding the subject matter of this course is very important to me	①	②	③	④	⑤	⑥	⑦
28.	I feel my heart beating fast when I take an exam	①	②	③	④	⑤	⑥	⑦
29.	I'm certain I can master the skills being taught in this class	①	②	③	④	⑤	⑥	⑦
30.	I want to do well in this class because it is important to show my ability to my family, friends, employer, or others	①	②	③	④	⑤	⑥	⑦
31.	Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class	①	②	③	④	⑤	⑥	⑦

PART B (LEARNING STRATEGIES)

The following questions ask about your learning strategies and study skills for this class. Again, **there are no right or wrong answers**. Answer the questions about how you study in this class as accurately as possible. Use the scale below to answer the questions. If you think the statement is very true of you, mark 7; if a statement is not at all true of you, mark 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

	Not at All True of Me						Very True of Me
	①	②	③	④	⑤	⑥	⑦
32. When I study the readings for this course, I outline the material to help me organize my thoughts	①	②	③	④	⑤	⑥	⑦
33. During class time I often miss important points because I'm thinking of other things	①	②	③	④	⑤	⑥	⑦
34. When I'm studying for this course, I often try to explain the material to a classmate or friend	①	②	③	④	⑤	⑥	⑦
35. I usually study in a place where I can concentrate on my course	①	②	③	④	⑤	⑥	⑦
36. When reading for this course, I make up questions to help focus my reading	①	②	③	④	⑤	⑥	⑦
37. I often feel so lazy or bored when I study for this class that I quit before I finish what I planned to do	①	②	③	④	⑤	⑥	⑦
38. I often find myself questioning things I hear or read in this course to decide if I find them convincing	①	②	③	④	⑤	⑥	⑦
39. When I study for this class, I practice saying the material to myself over and over	①	②	③	④	⑤	⑥	⑦
40. Even if I have trouble learning the material in this class, I try to do the work on my own without help from anyone	①	②	③	④	⑤	⑥	⑦
41. When I become confused about something I'm reading for this class, I go back and try to figure it out	①	②	③	④	⑤	⑥	⑦
42. When I study for this course, I go through the readings and my class notes and try to find the most important ideas	①	②	③	④	⑤	⑥	⑦

		Not at All True of Me					Very True of Me	
43.	I make good use of my study time for this course	①	②	③	④	⑤	⑥	⑦
44.	If course readings are difficult to understand, I change the way I read the material	①	②	③	④	⑤	⑥	⑦
45.	I try to work with other students from this class to complete the course assignments	①	②	③	④	⑤	⑥	⑦
46.	When studying for this course, I read my class notes and the course readings over and over again	①	②	③	④	⑤	⑥	⑦
47.	When a theory, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence	①	②	③	④	⑤	⑥	⑦
48.	I work hard to do well in this class even if I don't like what we are doing	①	②	③	④	⑤	⑥	⑦
49.	I make simple charts, diagrams, or tables to help me organize course material	①	②	③	④	⑤	⑥	⑦
50.	When studying for this course, I often set aside time to discuss course material with a group of students from the class	①	②	③	④	⑤	⑥	⑦
51.	I treat the course material as a starting point and try to develop my own ideas about it	①	②	③	④	⑤	⑥	⑦
52.	I find it hard to stick to a study schedule	①	②	③	④	⑤	⑥	⑦
53.	When I study for this class, I pull together information from different sources, such as lectures, readings, and discussions	①	②	③	④	⑤	⑥	⑦
54.	Before I study new course material thoroughly, I often skim it to see how it is organized	①	②	③	④	⑤	⑥	⑦
55.	I ask myself questions to make sure I understand the material I have been studying in this class	①	②	③	④	⑤	⑥	⑦

		Not at All True of Me					Very True of Me	
		①	②	③	④	⑤	⑥	⑦
56.	I try to change the way I study in order to fit the course requirements and the instructor's teaching style	①	②	③	④	⑤	⑥	⑦
57.	I often find that I have been reading for this class but don't know what it was all about	①	②	③	④	⑤	⑥	⑦
58.	I ask the instructor to clarify concepts I don't understand well	①	②	③	④	⑤	⑥	⑦
59.	I memorize key words to remind me of important concepts in this class	①	②	③	④	⑤	⑥	⑦
60.	When course work is difficult, I either give up or only study the easy parts	①	②	③	④	⑤	⑥	⑦
61.	I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying for this course	①	②	③	④	⑤	⑥	⑦
62.	I try to related ideas in this subject to those in other courses whenever possible	①	②	③	④	⑤	⑥	⑦
63.	When I study for this course, I go over my class and make an outline of important concepts	①	②	③	④	⑤	⑥	⑦
64.	When reading for this class, I try to relate the material to what I already know	①	②	③	④	⑤	⑥	⑦
65.	I have a regular place set aside for studying	①	②	③	④	⑤	⑥	⑦
66.	I try to play around with ideas of my own related to what I am learning in this course	①	②	③	④	⑤	⑥	⑦
67.	When I study for this course, I write brief summaries of the main ideas from the reading and my class notes	①	②	③	④	⑤	⑥	⑦
68.	When I can't understand the material in this course, I ask another student in this class for help	①	②	③	④	⑤	⑥	⑦
69.	I try to understand the material in this class by making connections between the readings and the concepts from the lectures	①	②	③	④	⑤	⑥	⑦

		Not at All True of Me					Very True of Me	
		①	②	③	④	⑤	⑥	⑦
70.	I make sure that I keep up with the weekly readings and assignments for this course	①	②	③	④	⑤	⑥	⑦
71.	Whenever I read or hear an assertion or conclusion in this class, I think about possible alternatives	①	②	③	④	⑤	⑥	⑦
72.	I make lists of important terms for this course and memorize the lists.	①	②	③	④	⑤	⑥	⑦
73.	I attend class regularly	①	②	③	④	⑤	⑥	⑦
74.	Even when course materials are dull and uninteresting, I manage to keep working until I finish	①	②	③	④	⑤	⑥	⑦
75.	I try to identify students in this class whom I can ask for help if necessary	①	②	③	④	⑤	⑥	⑦
76.	When studying for this course I try to determine which concepts I don't understand well	①	②	③	④	⑤	⑥	⑦
77.	I often find that I don't spend very much time on this course because of other activities	①	②	③	④	⑤	⑥	⑦
78.	When I study for this class, I set goals for myself in order to direct my activities in each study period	①	②	③	④	⑤	⑥	⑦
79.	If I get confused taking notes in class, I make sure I sort it out afterward	①	②	③	④	⑤	⑥	⑦
80.	I rarely find time to review my notes or readings before an exam	①	②	③	④	⑤	⑥	⑦
81.	I try to apply ideas from course readings in other class activities such as lecture and discussion	①	②	③	④	⑤	⑥	⑦

Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ)*. Ann Arbor: University of Michigan, National Center for Research to Improve Postsecondary Teaching and Learning.

PASS

AREAS OF PROCRASTINATION

For each of the following activities, please rate the degree to which you delay or procrastinate. Rate each item on an a to e scale according to how often you wait until the last minute to do the activity. Then, indicate on an a to e scale the degree to which you feel procrastination on that task is a problem. Finally, indicate on an a to e scale the degree to which you would like to decrease your tendency to procrastinate on each task. Mark your answers by circling the appropriate letter below each question.

I. *Writing a Term Paper*

1. To what degree do you procrastinate on this task?

Never Procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
a	b	c	d	e

2. To what degree is procrastination on this task a problem for you?

Not at all a problem	Almost never	Sometimes	Nearly always	Always a problem
a	b	c	d	e

3. To what extent do you want to decrease your tendency to procrastinate on this task?

Do not want to decrease		Somewhat		Definitely want to decrease
a	b	c	d	e

II. *Studying for Exams*

4. To what degree do you procrastinate on this task?

Never Procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
a	b	c	d	e

5. To what degree is procrastination on this task a problem for you?

Not at all a problem	Almost never	Sometimes	Nearly always	Always a problem
a	b	c	d	e

6. To what extent do you want to decrease your tendency to procrastinate on this task?

Do not want to decrease		Somewhat		Definitely want to decrease
a	b	c	d	e

III. *Keeping Up Weekly Reading Assignments*

7. To what degree do you procrastinate on this task?

Never Procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
a	b	c	d	e

8. To what degree is procrastination on this task a problem for you?

Not at all a problem	Almost never	Sometimes	Nearly always	Always a problem
a	b	c	d	e

9. To what extent do you want to decrease your tendency to procrastinate on this task?

Do not want to decrease		Somewhat		Definitely want to decrease
a	b	c	d	e

IV. *Academic Administrative Tasks: Filling out Forms, Registering for Classes, Getting ID Card, etc.*

10. To what degree do you procrastinate on this task?

Never Procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
a	b	c	d	e

11. To what degree is procrastination on this task a problem for you?

Not at all a problem	Almost never	Sometimes	Nearly always	Always a problem
a	b	c	d	e

12. To what extent do you want to decrease your tendency to procrastinate on this task?

Do not want to decrease		Somewhat		Definitely want to decrease
a	b	c	d	e

V. *Attendance Tasks: Meeting with Your Advisor, Making an Appointment with a Professor, etc.*

13. To what extent do you procrastinate on this task?

Never Procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
a	b	c	d	e

14. To what extent is procrastination on this task a problem for you?

Not at all a problem	Almost never	Sometimes	Nearly always	Always a problem
a	b	c	d	e

15. To what extent do you want to decrease your tendency to procrastinate on this task?

Do not want to decrease		Somewhat		Definitely want to decrease
a	b	c	d	e

VI. *School Activities in General*

16. To what extent do you procrastinate on these activities?

Never Procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
a	b	c	d	e

17. To what extent is procrastination on these activities a problem for you?

Not at all a problem	Almost never	Sometimes	Nearly always	Always a problem
a	b	c	d	e

18. To what extent do you want to decrease your tendency to procrastinate on these activities?

Do not want to decrease		Somewhat		Definitely want to decrease
a	b	c	d	e

Self-Handicapping Scale

Please indicate (by writing a number in the blank each item) the degree to which you agree with each of the following statements as a description of the kind of person you think you are most of the time. Use the following scale.

- 0 = disagree very much
- 1 = disagree pretty much
- 2 = disagree a little
- 3 = agree a little
- 4 = agree pretty much
- 5 = agree very much

- _____ 1. When I do something wrong, my first impulse is to blame circumstances.
- _____ 2. I tend to put things off until the last moment.
- _____ 3. I tend to overprepare when I have an exam or any kind of "performance."
- _____ 4. I suppose I feel "under the weather" more often than most people.
- _____ 5. I always try to do my best, no matter what.
- _____ 6. Before I sign up for a course or engage in any important activity, I make sure I have the proper preparation or background.
- _____ 7. I tend to get very anxious before an exam or "performance."
- _____ 8. I am easily distracted by noises or my own creative thoughts when I try to read.
- _____ 9. I try not to get too intensely involved in competitive activities so it won't hurt too much if I lose or do poorly.
- _____ 10. I would rather be respected for doing my best than admired for my potential.
- _____ 11. I would do a lot better if I tried harder.
- _____ 12. I prefer small pleasures in the present to larger pleasures in the dim future.
- _____ 13. I generally hate to be in any condition but "at my best."
- _____ 14. Someday I might "get it all together."
- _____ 15. I sometimes enjoy being mildly ill for a day or two because it takes off the pressure.
- _____ 16. I would do much better if I did not let my emotions get in the way.
- _____ 17. When I do poorly at one kind of thing, I often console myself by remembering I am good at other things.
- _____ 18. I admit that I am tempted to rationalize when I don't live up to other's expectations.
- _____ 19. I often think I have more than my share of bad luck in sports, card games, and other measures of talent.
- _____ 20. I would rather not take any drug that interfered with my ability to think clearly and do the right thing.
- _____ 21. I overindulge in food and drink more often than I should.
- _____ 22. When something important is coming up, like an exam or a job interview, I try to get as much sleep as possible the night before.
- _____ 23. I never let emotional problems in one part of my life interfere with other things in my life.
- _____ 24. Usually, when I get anxious about doing well, I end up doing better.
- _____ 25. Sometimes I get so depressed that even easy tasks become difficult.
- _____ 26. Where would you put yourself on the following scale?

Distinct Underachiever

Normal Achiever

Distinct Overachiever

Jones, E. E., & Rhodewalt, F. (1982). The Self-handicapping Scale. Available from F. Rhodewalt, Department of Psychology, University of Utah, Salt Lake City, UT.

Self-Worth Protection Scale

	Not very True of Me					Very True of Me	
	①	②	③	④	⑤	⑥	⑦
1. I avoid academic situations in which I can't do as well as I would like.	①	②	③	④	⑤	⑥	⑦
2. It's easy to try hard when my performance isn't being judged.	①	②	③	④	⑤	⑥	⑦
3. I tend to 'play it safe' with my studies and choose goals that are within my reach.	①	②	③	④	⑤	⑥	⑦
4. I rarely worry about the consequences of failing.	①	②	③	④	⑤	⑥	⑦
5. I don't doubt my ability to do well academically.	①	②	③	④	⑤	⑥	⑦
6. I select academic goals that test my abilities.	①	②	③	④	⑤	⑥	⑦
7. I withdraw from challenges due to fear of failure.	①	②	③	④	⑤	⑥	⑦
8. I find it necessary to do well academically in order to preserve a sense of self-worth.	①	②	③	④	⑤	⑥	⑦
9. I find it easiest to put my best effort into something when there is little risk of failure.	①	②	③	④	⑤	⑥	⑦
10. After an initial failure, I redouble my efforts.	①	②	③	④	⑤	⑥	⑦
11. I do my best to ensure academic success by not deviating from what's required.	①	②	③	④	⑤	⑥	⑦
12. I compare my ability to those around me and think that they may be more intelligent than I am.	①	②	③	④	⑤	⑥	⑦
13. I am afraid that I will fail at something even though I often do pretty well.	①	②	③	④	⑤	⑥	⑦
14. I avoid challenges that might result in failure.	①	②	③	④	⑤	⑥	⑦
15. I'm best able to try my hardest at something when failing at that thing won't reveal low ability.	①	②	③	④	⑤	⑥	⑦

		Not very True of Me					Very True of Me	
16.	I strive to ensure academic success through persistence and hard work.	①	②	③	④	⑤	⑥	⑦
17.	My self-worth is independent of how I perform academically.	①	②	③	④	⑤	⑥	⑦
18.	I lack confidence in my ability to do well.	①	②	③	④	⑤	⑥	⑦
19.	When I succeed at something I 'm confident I'll be able to repeat that success.	①	②	③	④	⑤	⑥	⑦
20.	Doing well academically allows me to preserve a sense of self-worth.	①	②	③	④	⑤	⑥	⑦
21.	I perform at my best when there is little risk of failure.	①	②	③	④	⑤	⑥	⑦
22.	I take action to avoid failure at all costs.	①	②	③	④	⑤	⑥	⑦
23.	I find it difficult to give of my best due to a persistent fear of failure.	①	②	③	④	⑤	⑥	⑦
24.	I closely follow assignment requirements in order to avoid being marked down.	①	②	③	④	⑤	⑥	⑦
25.	After an initial setback in my studies, I cut my losses and move on to something else.	①	②	③	④	⑤	⑥	⑦
26.	I underachieve relative to my level of ability, choosing easy goals in order to ensure success.	①	②	③	④	⑤	⑥	⑦
27.	Setting goals that are within the limits of my ability to achieve allows me to preserve a sense of self-worth.	①	②	③	④	⑤	⑥	⑦
28.	I strive to ensure success by a thorough approach, leaving no stone unturned.	①	②	③	④	⑤	⑥	⑦
29.	I try to avoid situations in which failure will reveal low effort.	①	②	③	④	⑤	⑥	⑦
30.	When I succeed at something I feel relieved rather than self-congratulatory.	①	②	③	④	⑤	⑥	⑦
31.	I must prove I'm worthwhile through my achievements.	①	②	③	④	⑤	⑥	⑦

		Not very True of Me					Very True of Me	
		①	②	③	④	⑤	⑥	⑦
32.	When I fail after putting a lot of effort into something I'm unlikely to conclude I have low ability.	①	②	③	④	⑤	⑥	⑦
33.	I am afraid of putting too much effort into an academic task in case I fail.	①	②	③	④	⑤	⑥	⑦
34.	When I succeed it's always partly due to other people or circumstances.	①	②	③	④	⑤	⑥	⑦
35.	When I succeed after a lot of effort, it doesn't prove I have ability.	①	②	③	④	⑤	⑥	⑦
36.	When there is a likelihood of failing at something, I think it's best not to put all my effort into it.	①	②	③	④	⑤	⑥	⑦
37.	I worry about not succeeding with a project or an examination, even though others around me have considerable confidence that I will do well.	①	②	③	④	⑤	⑥	⑦
38.	If I receive praise or recognition for something I tend to discount the importance of my own achievement.	①	②	③	④	⑤	⑥	⑦
39.	I always try to avoid situations that are likely to reveal low ability.	①	②	③	④	⑤	⑥	⑦
40.	I'm not particularly threatened by situations that are likely to reveal low ability.	①	②	③	④	⑤	⑥	⑦
41.	I perform at my best when my performance isn't being judged.	①	②	③	④	⑤	⑥	⑦
42.	I often feel my success was due to the ease of the task or things going in my favor.	①	②	③	④	⑤	⑥	⑦
43.	When I face new challenges, I doubt my ability to do well.	①	②	③	④	⑤	⑥	⑦
44.	I don't rate my academic ability very highly.	①	②	③	④	⑤	⑥	⑦

Thompson, T., & Dinnel, D. L. (2003). A validation and reliability study of the Self-Worth Protection Scale. *British Journal of Educational Psychology*, 73, 89–107.

Test Anxiety Measure

HOW I FEEL ABOUT TESTING

What is your GPA? _____ What is your class rank? _____

What is your gender? _____ What was your SAT combined score? _____

Please consider the class you have directly AFTER EDPSY in which there is a test.

What is your current grade in that class? _____

What type of tests are given? (Please Circle)

Multiple-Choice Essay Short Answer M ix of items Other: _____

1=Never	2=Seldom	3=Sometimes	4=Often	5= Always
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These items should be read as “I feel stressed” ...

- | | | | | | | |
|-----|--|---|---|---|---|---|
| 1. | The day before the test. | 1 | 2 | 3 | 4 | 5 |
| 2. | The morning before the test. | 1 | 2 | 3 | 4 | 5 |
| 3. | On the way to take the test. | 1 | 2 | 3 | 4 | 5 |
| 4. | I study a lot for a test. | 1 | 2 | 3 | 4 | 5 |
| 5. | I do NOT study a lot for a test. | 1 | 2 | 3 | 4 | 5 |
| 6. | More or less for different types of tests. | 1 | 2 | 3 | 4 | 5 |
| 7. | About how the test is going to affect my grade. | 1 | 2 | 3 | 4 | 5 |
| 8. | About what my parents will think about my test performance. | 1 | 2 | 3 | 4 | 5 |
| 9. | About what my friends will think about my test performance. | 1 | 2 | 3 | 4 | 5 |
| 10. | About what my classmates will think about my test performance. | 1 | 2 | 3 | 4 | 5 |
| 11. | About what my teacher will think about my test performance. | 1 | 2 | 3 | 4 | 5 |
| 11. | When taking multiple-choice tests. | 1 | 2 | 3 | 4 | 5 |
| 12. | When taking short-answer tests. | 1 | 2 | 3 | 4 | 5 |
| 13. | When taking essay tests. | 1 | 2 | 3 | 4 | 5 |
| 14. | When I can't do part of the test. | 1 | 2 | 3 | 4 | 5 |
| 15. | When there is a time limit | 1 | 2 | 3 | 4 | 5 |
| 16. | When I think about how I am doing on the test. | 1 | 2 | 3 | 4 | 5 |
| 17. | When I receive the test. | 1 | 2 | 3 | 4 | 5 |
| 18. | When I see other people turn in their tests. | 1 | 2 | 3 | 4 | 5 |
| 19. | When I am the first to turn in the test. | 1 | 2 | 3 | 4 | 5 |
| 20. | When I have trouble on the first problem or item. | 1 | 2 | 3 | 4 | 5 |
| 21. | After I turn in the test. | 1 | 2 | 3 | 4 | 5 |
| 22. | After talking to other people in the class. | 1 | 2 | 3 | 4 | 5 |
| 23. | After hearing the teacher talk about the answers. | 1 | 2 | 3 | 4 | 5 |
| 24. | When the teacher talks about the class average. | 1 | 2 | 3 | 4 | 5 |
| 25. | Waiting for the test to be returned. | 1 | 2 | 3 | 4 | 5 |
| 26. | When the test is being returned. | 1 | 2 | 3 | 4 | 5 |
| 27. | Test Anxiety decreases my test performance. | 1 | 2 | 3 | 4 | 5 |
| 28. | Test Anxiety helps me to do better on exams. | 1 | 2 | 3 | 4 | 5 |

Appendix D

Interview Protocol

(Intro script)

1. What is your status? (gender, year in school, and major)

2. Think of the recent time you have procrastinated on academic task.

(If you cannot come up with an academic task, you may consider others)

Can you describe that time?

Did you intend to start it earlier but ended up doing it later than expected?

Can you remember when you started working on the task?

(Did you look at what the task was before you started, Did you consider how you were going to accomplish the task?)

Describe the task for which you procrastinated.

(Was it difficult/easy, how much work load or time did it need)

How did you feel about the task?

(Did you feel fairly comfortable with the task, or were you to some extent worried about completing the task)

How much did you care about the outcome or performance of your work?

How do you feel after you completed the task?

Why do you think you procrastinated on this task?

How was the outcome of the task?

How did you feel about it? (satisfied, happy, angry, worried, depressed)

Why do you think you had such outcome?

If you had the chance to do the same task, would you behave differently?

Is this case you just described similar to the other times you have procrastinated?

Why or why not if it is different?

How is it different?

3. Think of a time you think you did/ did not do well on the task (after procrastinating).

At that time, why do you think you had such result?

Why did you procrastinate?

4. Why do you think people procrastinate on academic tasks?

5. Think of a time you did not procrastinate on academic task.

(If you cannot come up with an academic task, you may consider others)

Can you describe that time?

Describe the task for which you did not procrastinate.

How did you feel about the task?

How much did you care about the outcome or performance of your work?

Why do you think you did not procrastinate on this task?

6. Have you ever put off the academic tasks (assignments) intentionally until the very last minute in order to make yourself concentrate better on the task?

Did it work?

Could you have been done better without procrastination?