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Procrastination and Motivation Beliefs of Adolescents:
A Cross-Cultural Study

by

Wanwisa Hannok

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Abstract

Using a mixed methods approach, this dissertation included two studies exploring procrastination and academic motivation beliefs of adolescents from Canada and Thailand. Study 1 examined the relationships between procrastination, motivation beliefs—self-efficacy, self-efficacy for self-regulated learning, self-esteem, and test anxiety—and academic performance and explored significant predictors of adolescent procrastination across two cultures. In this study, 312 Canadian and 401 Thai adolescents from secondary schools in an urban area in western Canada and an urban area in North-Eastern Thailand completed a 47-item survey containing procrastination and four motivation measures. In Study 2, semi-structured interviews were conducted with 14 Thai adolescents representing low and high achieving students, to provide additional information about the role of motivation on adolescent procrastination and investigate academic procrastination of Thai adolescents in more depth. The quantitative findings demonstrated that all motivation variables significantly predicted procrastination, with self-efficacy for self-regulated learning strongly influencing adolescents across cultures. Findings from the qualitative study revealed six themes pertaining to academic procrastination: a) definitions of procrastination, b) antecedents of procrastination, c) consequences of procrastination, d) overcoming procrastination, e) the role of motivation, and f) the role of cultures on motivation, achievement, and procrastination. Quantitative and qualitative findings were integrated and discussed in order to provide insights into adolescent procrastination. Theoretical and educational implications as well as suggestions

for future research were also provided.

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CHAPTER ONE: INTRODUCTION

A large body of research shows that students' motivation beliefs—the personal beliefs they possess that influence choice, persistence, and effort—influence academic achievement (e.g., Chiu & Xihua, 2008; Greene & Miller, 1996; Singh, Granville, & Dika, 2002). However, many students have a common academic problem that impedes their achievement; namely procrastination (e.g., Randy, Courtney, & Rebekah, 2004; Moon & Illingworth, 2005; Van Eerde, 2003). Procrastination is defined as unnecessarily postponing tasks that need to be completed (Tuckman, 2002) and is often seen in students with tasks such as writing assignments and studying for examinations. Research has found that the majority of college students regularly put off academic tasks or other important timely activities (Onwuegbuzie, 2004). Solomon and Rothblum (1984) examined the frequency of college students' procrastination and found that 46% of students nearly always or always put off writing a term paper; 28% delayed studying for the exams; and approximately 30% procrastinated on reading weekly assignments. In a group of nontraditional students who were ethnically, economically, and culturally diverse, Prohaska, Morrill, Atiles, and Perez (2000) found that the estimates of students who reported procrastinating ranged between 12% to 39%, with the greatest amount of academic procrastination occurring for the same tasks described in Solomon and Rothblum's study. Approximately 15-20% of adults in the general population are also affected by chronic procrastination (Steel, 2007).

Prohaska et al. (2000) note, "Understanding academic procrastination is

important, because, as most instructors are aware, students' tendencies to delay responsibilities are not without consequences" (p. 127). Some student procrastinators have reported negative consequences of procrastination such as stress, anxiety, low self-esteem, and poor quality of work (Ferrari, Johnson, & McCown, 1995). In particular, Pychyl, Lee, Thibodeau, and Blunt (2000) have found that students reported high levels of guilt and low levels of motivation when they reported procrastinating. Similarly, procrastination is associated with low achievement motivation in that procrastinators have shown a lack of effort, low persistence as well as low use of self-regulation skills (Dietz, Hofer, & Fries, 2007). Moreover, empirical evidence has suggested a link between procrastinating behavior and individual performance: procrastinators generally perform poorly (Kennedy & Tuckman, 2010; Steel, Brothen, & Wambach, 2001; Tice & Baumeister, 1997; Wesley, 1994). These findings indicate that procrastination is potentially detrimental to students' achievement.

Recently, procrastination, academic motivation beliefs, and performance have been increasingly explored in order to comprehend how procrastination occurs and how students can be helped to avoid this problem. However, most of the studies have focused on college students in western cultures. There are very few studies investigating the procrastination of high school-aged or younger students or students from diverse cultural settings. Lack of research in these areas is seen as a possible explanation why procrastination is not entirely understood, especially across cultural settings (Haycock, McCarthy, & Skay, 1998; Steel, 2007).

Using a mixed methods approach, this dissertation included two studies that aim to explore procrastination, academic motivation beliefs, and performance of high school students from two different countries (i.e., Canada and Thailand). Mixed methods research is broadly defined as research in which both qualitative and quantitative approaches are used to collect and analyze data (Tashakkori & Creswell, 2007). Using a mixed methods approach provides advantages such that researchers can compare the findings derived from quantitative and qualitative methods, giving evidence of the validity of research (Creswell, 2003; Harkness et al., 2006). A combination of quantitative and qualitative analyses also allows researchers to "interpret complex patterns of the results and place them into a larger framework" (Harkness et al., 2006). Using self-report surveys, Study 1 examined the relationships between procrastination, motivation beliefs: self-efficacy, self-efficacy for self-regulated learning, self-esteem, test anxiety, and academic performance and explored significant predictors of high school students' procrastination across two cultures. Motivation beliefs have been found to differ depending on people's cultural beliefs and practices (e.g., Heine, 2004; Klassen, 2004) and to be significantly related to procrastination (e.g., Klassen, Krawchuk, Lynch, & Rajani, 2008).

Study 2 was designed as a follow-up study to deepen understanding of the Study 1 quantitative data, and to explore Thai adolescents' procrastination in more depth. To obtain such qualitative data, a stratified sample of Thai students was interviewed with semi-structured interview questions based on the procrastination literature and on the quantitative results. Because the link between procrastination

and academic performance has been found, qualitative themes were also analyzed based on students' academic performance. Combining quantitative and qualitative approaches, this research uncovers adolescents' procrastination in a variety of contexts and across cultures, which not only increases our understanding of procrastination and its relation to motivation beliefs, but also leads us to effective interventions for students affected by dysfunctional procrastination.

The next section will provide a literature review of procrastination research, and explore its relationship with related motivation beliefs in diverse cultural contexts. First, procrastination is defined and discussed from the perspectives of *self*-relevant theories (i.e., self-efficacy and self-regulated learning). Second, other motivation constructs including self-esteem and test anxiety are addressed in terms of their relationship to procrastination. Lastly, the effects of culture on motivation and procrastination are described.

CHAPTER TWO: LITERATURE REVIEW

Procrastination

Procrastination refers to "the behavior of postponing" (Burka & Yuen, 1983, p. 5). More specifically, Solomon and Rothblum (1984) contended that procrastination is "the act of needlessly delaying tasks to the point of experiencing subjective discomfort" (p. 503). Steel (2007) suggested that "to procrastinate is to delay an intended course of action despite expecting to be worse off for the delay" (p. 66). According to motivation researchers (e.g., Steel et al., 2001), people procrastinate not because they lack intentions to work but because they fail to take actions as they intend to, reflecting a large gap between intentions and actions in procrastinators. Procrastination can be considered to be a sort of "anti-motivation" (Klassen, et al., 2008, p.137); that is, in contrast to procrastinators, motivated individuals set goals for themselves, exert effort in their work, and persist in working even when facing obstacles. Despite a variety of definitions, procrastination involves three common components: behavior, cognition, and affect (Solomon & Rothblum, 1984; Popoola, 2005). Popoola suggested that procrastination is the dispositional trait that makes individuals delay doing things, with anxiety as a result. Moreover, Balkis and Duru (2009) noted that the definitions of procrastination commonly include "actions and behaviors that affect the fruitfulness of the individual in a negative way" (p. 19).

Regardless of procrastination definitions, procrastination can occur across domains. For example, some individuals may delay taking care of their taxes or seeking help for health problems. Compared to any other kind of procrastination,

academic procrastination has received both theoretical and applied attention (Milgram & Toubiana, 1999). Tuckman (2002) defined academic procrastination as "a dispositional trait that can have particularly serious consequences for students, whose lives are characterized by frequent deadlines" (p. 2). Dietz, Hofer, and Fries (2007) viewed academic procrastination as the tendency to postpone learning activities. Relative to academic procrastination, Lay, Knish, and Zanata (1992) identified factors that contribute to procrastination, including "lack of practice of preparation," "reduced effort," "the selection of unfavorable performance settings," and "the selection of unfavorable preparation settings" (p. 244). For example, students may select study places that promote distraction and delay. This is also a reflection of self-handicapping (Lay et al., 1992). Yong (2010) maintained that academic procrastination is an irrational delay of the completion of academic tasks. Many tertiary students intend to complete their academic tasks in a timely fashion; however, they are not motivated to get started which in return causes them to experience low self-esteem, depression, and academic failure.

Delay completing tasks, however, is not always maladaptive. Burka and Yuen (1983) noted two kinds of procrastination: comfortable procrastination and problem procrastination. Procrastination becomes a problem if it results in negative consequences either externally (e.g., a library fine for a book) or internally (e.g., depression and stress). In a similar fashion, Ferrari and his colleagues (1995) distinguished between functional and dysfunctional procrastination. He argued that "such behavior becomes dysfunctional only when

there are penalties imposed on the procrastinator" (p.7). Although two kinds of procrastination have been identified, dysfunctional procrastination has received more attention in the literature (e.g., Steel, 2007).

In addition to dysfunctional and functional forms of procrastination, previous research has identified two additional sub-types of procrastination: arousal and avoidance procrastination, indicating different motives for procrastinators. In an investigation of two procrastination measures, Ferrari (1992) found that Lay's inventory (1986) measured arousal procrastination as individuals delay tasks for sensation-seeking reasons. In contrast, McCown and Johnson's inventory (1989) measured procrastination with avoidance being an underlying motive. In particular, avoidance procrastinators may delay tasks because of poor self-confidence and/or poor self-esteem. However, recent research (i.e., Simpson & Pychyl, 2009) examined the association between arousal-based traits—sensation seeking, extraversion, and the reducer index—and procrastination, but the findings did not provide support for arousal procrastination. First, inconsistently with Ferrari (1992), Simpson and Pychyl's study showed that total scores on the General Procrastination Scale (GP; Lay, 1986) did not correlate with total scores on the Sensation Seeking Scale - V (SSS – V; Zuckerman, Eysenck, & Eysenck, 1978). A factor analysis of these two scales also yielded six factors with items of each scale loading on different factors. Second, the correlational findings indicated that neither extraversion scores nor the reducer index scores were associated with the procrastination measures (i.e., Procrastination Assessment Scale-Students [PASS; Solomon &

Rothblum, 1984] and Procrastination Study Tasks [PCS; Schouwenburg, 1995]). Finally, small mean differences on arousal-based traits and procrastination were observed between individuals with strong and weak arousal-related beliefs (i.e., Risk – Taking/Arousal) as a cause of procrastination. Due to these unsupported findings, Simpson and Pychyl questioned the claim from Ferrari's original study that GP measures arousal procrastination. They also concluded that with rationalizations such as: "they are motivated to procrastinate because they believe they work better under pressure", individuals are providing an explanation to excuse their behavior of delaying tasks (p. 910).

Motivation researchers have increasingly turned their attention to the phenomenon of procrastination, with the literature providing two explanations for procrastination behavior. First, procrastination is considered a *state* when individuals procrastinate as a result of contextual or situational factors including the nature of the task (Schraw, Wadkins, & Olafson, 2007; Wolter, 2003). Second, procrastination is said to be a *trait* if task postponement becomes chronic. Differently put, trait procrastination leads individuals to delay completing tasks in a variety of contexts and situations (Schraw et al., 2007; Wolter, 2003). Chronic procrastinators, who are unable to complete tasks by the deadlines are likely to experience negative emotions such as anxiety and depression (Spada, Hiou, & Nikcevic, 2006).

An alternative explanation why students put off academic tasks is elaborated from a self-regulated learning perspective. In this view, procrastination is referred to as a deficit in the use of self-regulated learning strategies such that

procrastinators lack self-regulatory knowledge and skills; consequently, they are unlikely to use these strategies (Wolter, 2003). The relation of self-regulated learning and procrastination is discussed more in the next section.

Procrastination and Self-Regulated Learning

Self-regulated learning is defined in various ways but in general, self-regulated learning includes three components (Pintrich, 1995). The term *control* describes the first component. Learners who are self-regulated attempt to control their behavior, motivation, and emotion. The second component lies with goals that learners attempt to achieve. The goals help learners monitor and make the right judgments about their performance. The third component concerns the individual learners. That is, learners must be intrinsically motivated to monitor or change their behaviors.

Self-regulated learners regulate their learning and performance through cognitive and metacognitive strategies (Pintrich, 1999). Cognitive strategies consist of surface and deep processing strategy; for example, rehearsal, elaboration, and organization (Pintrich & De Groot, 1990). Metacognitive strategies refer to planning, monitoring, and regulating (Zimmerman, 1986). Self-regulated learners use deep processing strategies, plan how to approach a learning task, monitor their comprehension, and evaluate their progress toward completing a task. These students are active learners who can manage their time and place to study their learning environments, which include avoiding or managing distractions (Pintrich, 1995; Wolters & Rosenthal, 2000). However, learners' use of learning strategies and regulation of their cognition depends on motivation

beliefs such as self-efficacy (Zimmerman, 2000). Perceived self-efficacy determines how learners use cognitive and metacognitive strategies when approaching a task, how much effort they put into a task, and how persistent they are in the face of difficulties.

According to a self-regulated learning perspective (Wolter, 2003), self-regulated learners are different from procrastinators in two possible ways. First, self-regulated learners have more knowledge and skills pertaining to cognitive and metacognitive strategies than those who frequently procrastinate. Second, self-regulated learners are more efficacious and mastery goal oriented than procrastinators. There is evidence to suggest that procrastination is associated with low achievement motivation, including low effort, low persistence as well as low use of self-regulated skills (Dietz et al., 2007). Bandura (1997) also noted that self-regulated students plan and manage to work on their tasks, which in turn increases the chances of successfully completing them. In contrast, lack of self-regulatory skills cause students to wait until the last minute to complete their tasks. Howell and Watson (2007) investigated relationships between procrastination, achievement goals (the purposes of one's achievement pursuit), and learning strategies among undergraduate students and found negative associations between procrastination and mastery-approach goals (a learning-focus orientation). The findings also showed relationships between procrastination and lower use of cognitive and metacognitive strategies. Learning strategies and disorganization were found as significant predictors of procrastination.

Even though links between procrastination and cognitive components of self-regulation have been found, only motivation components of self-regulation, which is self-efficacy for self-regulation, is the focus in the current study. An understanding of relationships between procrastination and perceived self-efficacy is important because beliefs in capabilities influence choices of activities and ways to approach them. As Bandura (1997) stated, "Insidious self-doubts can easily overrule the best of skills" (p. 35). That is, people may choose to avoid tasks even with a great deal of knowledge and skills if they feel incompetent to use those knowledge and skills. In the next section, first, self-efficacy is introduced, with a discussion of its relation to procrastination. Then, self-efficacy for self-regulated learning and procrastination are addressed.

Procrastination and Self-Efficacy

Bandura (1997) stated that "beliefs of personal efficacy constitute the key factor of human agency. If people believe they have no power to produce results, they will not attempt to make things happen" (p. 3). According to Bandura's contention, peoples' beliefs about what they can or cannot do powerfully influence how they perform an action. These motivation beliefs are also known as self-efficacy, a core construct in social cognitive theory. Self-efficacy refers to personal judgments of one's capability to accomplish a specific task (Bandura, 1997; Pajares, 1996). People form their self-efficacy through four important sources: mastery experiences, vicarious experiences, verbal persuasions, and physical and emotional states. Mastery experiences have been found to be the greatest source of self-efficacy (Bandura, 1997).

Researchers investigating motivation beliefs need to be aware of the concept of self-efficacy as a domain-specific construct (Pajares, 1996). Self-efficacy, therefore, should not be misconstrued as other self-referent constructs like self-concept and self-esteem (Bandura, 1997). Self-concept, according to Bandura (1997), is a global understanding of oneself derived from direct experiences and evaluations adopted from significant others. Self-concept is measured by asking people to respond to statements regarding their body image, abilities, physical appearance, and thinking. Bandura (1997) further differentiated self-efficacy from self-esteem, which refers to how people feel about themselves. People's self-esteem may or may not rely on their judgment about their capabilities to perform particular tasks because self-esteem increases or decreases only if it is contingent on those domains. Therefore, people may have low self-efficacy but not low self-esteem in areas in which they do not invest their self-worth.

Self-efficacy has an impact on cognitive, motivational, and emotional processes, which in turn contribute to performance (Bandura, 1997). People with strong beliefs in their abilities set challenging goals for themselves and endeavor to meet their goals. In contrast, people with low self-efficacy in specific areas tend to choose easy tasks in those areas. They put less effort into tasks and give up on them easily when faced with obstacles. Due to adaptive learning patterns, efficacious people have more chances for performance accomplishments and less susceptibility to depression and stress than those who develop self-doubts.

Pajares (2006) pointed out a mediational role of self-efficacy in academic

domains. He stated that students who have similar abilities but different perceived self-efficacy may not perform to the same level. This is because students use self-beliefs about their capability to determine what they do with knowledge and skills they have developed. Simply said, students interpret the results from engaging in a particular task and then create a self-belief about what they have accomplished and can accomplish, which in turn affects their performance. Zimmerman and Cleary (2006) added that students are more likely to experience academic success when they believe that they can deal with their difficult learning situations effectively.

Accordingly, beliefs in abilities may link to procrastination in that students with high self-efficacy have a strong belief in their capability to carry out or pursue tasks that need to be done (Klassen et al., 2008). Moreover, it enables students to deeply engage in tasks or academic activities (Brownlow & Reasinger, 2000) to the point that they develop more interest in academic activities than in other activities (Bandura, 1997; Steel, 2007). Research has demonstrated the relationships between self-efficacy and procrastination, mostly among college students. Haycock et al. (1998) examined the extent to which procrastination can be predicted by efficacy expectations, anxiety, gender, and age in college students. They used a more domain-specific measure of efficacy expectations called the Self-Efficacy Inventory (SEI) to measure "behaviors related to the task of doing an important and difficult project by a specific deadline" (p. 319). SEI was designed to assess efficacy level and strength for behaviors related to completing tasks. Zero-order correlations were calculated and the results showed a significant

inverse relationship between procrastination and efficacy level (r = -.40), cumulative efficacy strength (r = -.50), and average efficacy strength (r = -.39). The findings from multiple regression suggested that the regression model accounted for 29% of the variance in procrastination, and that cumulative efficacy strength alone accounted for 25% of the variance. They thus concluded that cumulative efficacy strength was the only significant predictor of procrastination.

Other research examining a link between procrastination and self-efficacy in undergraduates was conducted by Krawchuk (2008). In her study, she explored the relationships between procrastination and self-efficacy in term paper writing and examinations as one of several motivation variables among 148 undergraduate students. This study addressed a methodological issue discussed in self-efficacy literature by measuring students' beliefs in their ability to perform specific tasks common in higher education (i.e., term paper writing and examinations), rather than general self-efficacy. In a general sense, she found that participants with low self-efficacy were more likely to procrastinate and expected worse academic outcomes. Self-efficacy was also a significant predictor of general procrastination. However, the findings failed to show the link between self-efficacy for learning and performance and procrastination in each particular domain. The author argued that the non-significant results might be due to fluctuating sample size and self-efficacy measures used (i.e., the adapted version of Motivated Strategies for Learning Questionnaire and Zimmerman, Bandura, and Martinez-Pons' (1992) self-regulated learning measure). Interestingly, these measures have been used in other studies (e.g., Klassen et al., 2009) that yielded

significant relationships between procrastination and self-efficacy in adolescents. It would be useful for researchers to test these well-known instruments for their effective use in a variety of contexts. Thus, these measures were used in this study with different samples and contexts.

Procrastination and Self-Efficacy for Self-Regulated Learning

Research has provided evidence of the links between self-efficacy and behavior avoidance or persistence in higher education. Another key construct in predicting procrastination is self-efficacy for self-regulated learning (Klassen et al., 2008). As already noted, perceived self-efficacy is a motivation facet of self-regulation that includes students' control over their learning situations through cognitive and metacognitive strategies (Pintrich, 1999). Self-efficacy for self-regulated learning, also known as self-regulatory efficacy, is defined as individuals' beliefs in their capability to use self-regulatory strategies effectively (Usher & Pajares, 2008). It has been speculated that possessing self-regulatory strategies does not guarantee that students will employ these strategies appropriately; therefore, the role of self-efficacy in self-regulation is to determine how students make effective use of their self-regulatory skills when approaching tasks and how much effort they put into tasks (Greene & Miller, 1996; Usher & Pajares, 2008; Zimmerman, 2000). Self-regulatory efficacy also contributes to academic attainment as well as continuance in school (Caprara et al., 2008). To measure self-regulatory efficacy, people will respond to items asking about their capability to implement self-regulated learning strategies, for instance motivating themselves to complete tasks, using cognitive strategies to understand materials,

and adopting metacognitive strategies to plan and organize their learning as well as to control their study environments (Zimmerman et al., 1992).

Self-efficacy for self-regulated learning plays an important role in academic self-motivation. In an effort to test a social cognitive model of academic self-motivation, Zimmerman et al. (1992) showed that for high school students, self-efficacy for self-regulated learning was significantly correlated with perceived self-efficacy for academic achievement. Path analysis also demonstrated a significant path between students' self-efficacy for self-regulated learning and perceived self-efficacy for academic achievement, and between perceived self-efficacy for academic achievement and final grade in social studies classes. In other words, students' perception of their academic efficacy was influenced by a belief in their capability to successfully use self-regulatory strategies to regulate their learning, which in turn affected their academic performance.

Recently, Caprara et al. (2008) conducted a longitudinal study of the role of perceived self-efficacy for self-regulated learning in academic achievement and school dropout. In Caprara et al.'s study, Italian adolescents ranging in age from 12 to 22 years completed the scale assessing perceived efficacy for self-regulated learning at six different times. The findings showed that adolescents' self-regulatory efficacy gradually declined from junior to high school and that with socioeconomic status being controlled, self-regulatory efficacy predicted high school grades and school dropout. Particularly, high self-regulatory efficacy from junior high school was predictive of high school grades and low school dropout.

The lower the decline in self-regulatory efficacy from junior to senior high school, the higher the grades and the greater the chance of completing high school. Multigroup structural equation modeling demonstrated the contribution of self-regulatory efficacy to junior high grades, self-regulatory efficacy in high school, and school dropout. Self-regulatory efficacy also played a mediational role in the relation of junior high grades and high school grades. Self-efficacy for self-regulated learning has also been found to predict expectations of academic performance in an eastern culture (Singaporean culture). Tan et al. (2008) found that Singapore undergraduate students who reported having high self-efficacy for self-regulated learning expected to receive a good grade at the end of academic year, while those who had low self-efficacy for self-regulated learning expected not to do well at the end of academic year.

Because students with high self-efficacy for self-regulated learning are said to be capable of planning and managing their own learning, one would expect that these students meaningfully engage in their tasks and exert effort in accomplishing their academic goals. On the other hand, students who do not know how to effectively regulate their learning may choose to avoid or put off tasks. Recently, links between self-efficacy for self-regulated learning and academic procrastination have been reported in a few motivation studies. For example, in the study of Tan et al. (2008) described earlier, self-efficacy for self-regulated learning was significantly related to procrastination such that students possessing self-regulatory efficacy procrastinated much less than other students.

Using a mixed-methods framework, Klassen et al. (2008) investigated the

relationships between procrastination and motivation in 208 undergraduates with and without learning disabilities (LD and NLD). Their findings indicated a strong inverse relationship between procrastination and self-regulatory efficacy (r = -.64 and -.66 for the LD and NLD groups, respectively). Metacogitive self-regulation and help-seeking behavior were also found to be negatively associated with procrastination. One of a few studies exploring procrastination and motivation in school-aged adolescents within diverse cultural settings, Klassen and Cetinkale's (2009) study of Turkish secondary school students found that self-efficacy for self-regulated learning was higher in girls than boys. However, self-efficacy for self-regulated learning was shown to be strongly associated with and the strongest predictor of procrastination for both female and male students. Consistent with results of previous studies, the authors suggested that "procrastination is a form of dysfunctional motivation that operates in similar ways in diverse cultural settings" (p. 14). Because there have been only a few studies looking at these variables across cultural groups, more research needs to be conducted in a variety of cultural contexts to confirm how procrastination operates and how it relates to other academic motivation variables across cultures. Interesting patterns of academic self-motivation, which extends motivation and procrastination literature, might emerge when different cultural groups are included.

Procrastination and Self-Esteem

Procrastination has been said to occur not only when individuals feel incompetent to perform tasks or to use learning strategies effectively, but also when individuals want to preserve their sense of self-esteem. Coopersmith (1967)

defined self-esteem as "a personal judgment of worthiness that is expressed in the attitudes the individual holds toward himself" (p.5). Rosenberg (1965) regarded self-esteem as a cognitive construct, reflecting how the individual feels about him or herself. He further explained high self-esteem and low self-esteem as follows:

> When we characterize a person as having high self-esteem, we are not referring to feelings of superiority, in the sense of arrogance, conceit, contempt for others, overweening pride; we mean, rather, that he has self-respect, considers himself a person of worth. Appreciating his own merits, he nonetheless recognizes his faults, faults that he hopes and expects to overcome...The term "low self-esteem" does not suffer from this dual connotation. It means that the individual lacks respect for himself, considers himself unworthy, inadequate, or otherwise seriously deficient as a person. (Rosenberg, 1979, p. 54)

Simply said, individuals with high self-esteem feel good about themselves, whereas with low self-esteem, individuals have negative feelings about themselves. Individuals are likely to develop high or low self-esteem primarily through social comparisons in varying contexts—social identity contexts, competence contexts, and value contexts. For example, individuals may view themselves either similar to or different from others. In other cases, they may see themselves capable or incapable as compared to others. All of these situations can lead to either low or high self-esteem (See Rosenberg, 1979 for a review). It has been found that self-esteem is extremely high in young children and declines when they approach and enter adolescence (Robin, Trezesniewski, Tracy, Gosling,

& Potter, 2002). One explanation is that young children have unrealistic self-evaluation and so inflate their self-esteem. When children get older, their cognitive abilities allow them to use social comparison in order to evaluate themselves. Self-esteem thus starts to decline at this period because older children come to realize their real self and self-competence (Harter, 1990).

High self-esteem correlates with positive outcomes, whereas lack of self-esteem is related to negative outcomes. For example, people with high self-esteem are believed to deal with life's problems without losing a sense of self and are not afraid to take risks or challenges (Carlock, 1999). Low self-esteem, in contrast, prevents people from trying hard on their tasks, resulting in people eventually giving up on tasks (Burger, 2004). Lack of self-esteem thus can damage people's sense of accomplishment. This may help explain why self-esteem is of interest to procrastination researchers. Some researchers (e.g., Ferrari, 1991) have thought of procrastination as a strategy to keep self-esteem from being damaged for people who have a "vulnerable self-esteem" (Ferrari, 1991, p. 246). These people postpone completing tasks so that their true performance ability is never seen and judged. Ferrari et al. (1995), later, pointed out a bidirectional relationship between these two constructs; that is, people with low self-esteem could be expected to delay completion of tasks and conversely, task delay could lower their self-esteem.

Previous studies have illustrated that a relationship between procrastination and self-esteem can be complex and affected by other factors such as age, gender, and culture. Pychyl, Coplan, and Reid (2002) found a significant

relationship between procrastination and self-worth in female adolescents but not in male adolescents. In addition, they also revealed that procrastination in male adolescents could not be predicted by their level of self-esteem. Klassen et al. (2008), investigated procrastination and motivation across cultures and found that self-esteem was a significant predictor for male and female Canadian adolescents, but not for male and female Singaporean adolescents. The findings from these studies have demonstrated the effects of gender and culture on procrastination and self-esteem. Another interesting finding claimed to further the literature was articulated in Beck, Koons, and Milgrim's study (2000). They found an interaction between procrastination and self-handicapping and self-esteem. That is, undergraduates with high self-esteem and high self-handicapping procrastinated more on exam preparation than did others. These individuals were seen as self-handicappers who had high but fragile self-esteem; therefore, they tended to use procrastination as a handicapping strategy. This study provokes new insight into the importance of types of self-esteem (i.e., strong or fragile) in addition to its levels (i.e., low or high) on people's postponement.

According to the literature, individuals with vulnerable self-esteem are prone to procrastinate to protect their fragile sense of self-worth. It is surprising that there is only modest research on self-esteem and procrastination in adolescents. Indeed, adolescents are likely to develop vulnerable self-esteem, which may influence their behavioral tendencies of delaying academic tasks.

Procrastination and Anxiety

In addition to self-worth, anxiety is a potential factor that may explain task postponement. Anxiety has received attention in the motivation research, and its negative relation to academic outcomes has also been well documented. However, less is known about anxiety and procrastination within the academic domain (Krawchuk, 2008), especially in children and adolescents. Indeed, Ferrari and his colleagues (1995) argued that "the relationship between anxiety and procrastination is more complex and controversial" (p.39).

Anxiety about exams is an academic problem that potentially contributes to stress in adolescents (Thompson, 2003). Test anxiety simply refers to the anxiety involved when taking a test (Onwuegbuzie, 2004). As a multidimensional construct, test anxiety comprises two factors, namely emotionality and worry. According to Cassady and Johnson (2002), emotionality is affective and psychological arousal experienced during evaluation situations, evident through rapid heartbeat, dizziness, and feelings of panic. The worry component is cognitive reactions to evaluation situations including comparing oneself to others, thinking about the consequences of failure, and feeling low competence in performance. Cassady and Johnson (2002) also suggested that emotional arousal and negative thought processes can limit students' abilities to perform well on tests, resulting in low achievement. Research recently found that academic anxiety (e.g., math anxiety) can be influenced by cognitive and motivational components of self-regulation. Jain and Dowson (2009) studied mathematics anxiety as a function of multidimensional self-regulation and self-efficacy in

eighth grade students using MSLQ and the Mathematics anxiety scale. The results showed that self-regulation was significantly and positively related to self-efficacy, which was significantly and negatively associated with anxiety. Simply said, increasing self-regulation (cognitive) can increase self-efficacy (motivation) which reduces mathematics anxiety.

Procrastination may become a strategy for some people in dealing with their anxiety. In particular, individuals can become anxious when they are asked to perform tasks at which they are afraid to fail; they try to reduce their anxiety by avoiding or delaying such tasks (Milgram & Toubiana, 1999). In fact, the link between the two constructs has been long investigated in adult students. For example, Rothblum, Solomon, and Murakami (1986) investigated the relationship between procrastination and trait anxiety. They used the Test Anxiety Scale developed by Sarason (Rothblum et al., 1986) as a trait measure of test anxiety. The findings indicated that undergraduates, especially females who reported a high level of procrastination tended to experience more test anxiety than those with a low level of procrastination. In a study exploring the prevalence of procrastination and its association with statistics anxiety, Onwuegbuzie (2004) found that procrastination as a result of fear of failure and task aversiveness was correlated with test anxiety. However, the author discussed some limitations: having only Caucasian-Americans as a dominant sample and using a self-report instrument as a measure of procrastination. He further suggested more research in this area using a variety of ethnic groups as well as research instruments such as behavioral instruments of procrastination in addition to a self-report measure.

Anxiety (i.e., test anxiety) is also a serious academic problem in children and adolescents (Ergene, 2003); consequently, it is important to incorporate anxiety into the investigation of procrastination in adolescents. By doing so, we will gain insight into how to help students to overcome their tendency to delay academic tasks as a possible strategy to avoid anxiety and to reduce their anxiety affected by procrastination. Scher and Osterman (2002) examined the reliability and the validity of Lay's Procrastination and Conscientiousness Scales in a sample of children, and also explored the relationship of procrastination and self-consciousness with other variables including anxiety. The Revised Children's Manifest Anxiety Scale comprising physiological anxiety, worry/oversensitivity, and social concerns/concentration items was used to assess children's anxiety. The results with respect to the relationship between procrastination and anxiety were similar to findings from research on adults. In general, children who reported a high level of procrastination showed high anxiety. When considering each subscale of anxiety separately, the authors found no significant relationship between procrastination and the worry component. As discussed by the authors, "procrastinators may be attempting to regulate their dispositional anxiety through their procrastination" (p. 395). In a study of academic procrastination and anxiety in a non-western culture, Milgram and Toubiana (1999) found that Israeli adolescents procrastinated when they became anxious about some particular tasks but not others. Specifically, the more they became anxious about preparing for examinations and writing papers, the more they put off those tasks. However, the less anxious they became about completing their homework, the more they

delayed it. One explanation is that Israeli adolescents delayed completing homework because they perceived this task to be easy to do and that the consequences of delaying were not severe (Milgram & Toubiana, 1999).

Procrastination and Academic Performance

Research has shown mixed results on the effect of procrastination on performance. That is, some researchers have observed the negative link between procrastination and academic performance, whereas the others have not. Consistently with the former findings, Wesley (1994) studied significant predictors of academic performance indicated by grade point average (GPA) in college students. He found that procrastination significantly correlated with GPA in both females (r = -.31) and males (r = -.48) and was a significant predictor of students' performance along with high school average and Scholastic Aptitude Test score (SAT).

The relationship between procrastination and performance was tested across learning contexts, with the similar results being found. For example, in a study investigating procrastination and performance in students assigned to an online class and a traditional, lecture-format introduction psychology class (Elvers, Polzella, & Graetz, 2003), procrastination was negatively correlated with performance in both groups, but procrastination predicted exam performance only for online students. Steel et al. (2001) investigated the relationships between procrastination, personality, performance, and mood in undergraduates in introduction psychology course taught with the personalized system of instruction. Performance criteria in this study included the number of exercises

competed, final exam grade, and course grade. Procrastination was measured on a scale developed based on a self-report questionnaire and direct observations. The results showed that procrastination was strongly correlated with all performance criteria, indicating that procrastinators had lower performance than those who did not procrastinate. With a strong correlation in all performance areas, the researchers concluded that procrastination was a consistent predictor of performance. In addition, they found that some procrastinators believed that they could make up for their procrastinating behavior. Tice and Baumeister (1997) also found that procrastinators in their study mistakenly thought that they could perform better by putting off tasks until later. The findings, however, demonstrated that procrastinators produced poor performance on both the assignment paper and the exams.

Intuitively, procrastinators may experience low grades or performance since they have less time to prepare when completing their delayed tasks at the last minute (Steel et al., 2001). However, according to previous studies, low achievement motivation may be a significant cause for low performance in procrastinators. These students may perform poorly because they put less effort on tasks (Tice & Baumeister, 1997). More particularly, procrastinators are likely unable to self-regulate. For example, Howell and Watson (2007) found that students who procrastinated had less use of cognitive and meta-cognitive strategies and were more disorganized than those who did not procrastinate. As mentioned, such self-regulatory skills are related to students' academic achievement (Muis & Franco, 2009). In other words, individuals do need to

develop self-regulatory skills to enhance their learning and performance. Moreover, Howell and Watson found that procrastination negatively correlated with mastery-approach goals which are important for improvements in students' learning, increased competence (Elliot, McGregor, & Gable, 1999), and academic performance (Muis & Franco, 2009). Similarly, Tuckman (2002) compared low, moderate, and high procrastinators on the total rationalization score, self-regulation score, and grades in a web-based course with many performances with deadlines. The findings showed that more serious procrastinators were more likely to utilize rationalizations (e.g., I'm just waiting for the best time to do it) and less likely to self-regulate, which possibly caused their lower grades.

Although procrastinators frequently display low achievement motivation, low self-regulation and high stress, one cannot assume that procrastinators always perform poorly. A few studies have found no connection between procrastination and academic performance (e.g., Mendelson, 2007). Steel (2007) noted that procrastination can result in poor performance if it is irrational and representative of low conscientiousness. His meta-analysis of procrastination's causes and effects showed that procrastination was related to overall GPA, course GPA, final exam scores, and assignment grades. Moreover, the strength of the relationship between procrastination and performance is similar to that of the relationship between conscientiousness and performance. Steel also mentioned a reciprocal relationship between procrastination and performance such that low performance can lead to low self-efficacy, which in turn can increase procrastinating behavior. In a similar vein, Chu and Choi (2005) argued that individuals display different

forms of procrastination. In attempting to identify a positive type of procrastination, Chu and Choi found that individuals who developed a passive form of procrastination were more likely to report lower GPA and higher moods (i.e., stress and depression) than nonprocrastinators and active procrastinators. However, the two latter groups were not different on such variables. Thus, according to these researchers, not all types of delay yield negative outcomes including low performance. Due to inconclusive results, there is a need to explore these relationships further. Therefore, the quantitative component in this dissertation tested the relationship between procrastination and students' performance (i.e., GPA). The qualitative component, moreover, addressed procrastination in high and low achieving students to see how these students described their experiences of procrastination.

Cross-Cultural Research: The Effect of Culture on Academic Motivation Beliefs and Procrastination

Learning and motivation have been treated as etic phenomena (McInerney, 2008)—psychological phenomena that are universal for all cultural groups (Shiraev & Levy, 2004). Specifically, these constructs (e.g., self-efficacy) have been developed in western cultures with an individualistic orientation (Kumar & Maehr, 2007; Singelis, Triandis, Bhawuk, & Gelfan, 1995). According to Kitayama and Morling (2008), "Motivation does not reflect solely the idiosyncratic desires and wants of an individual actor; instead, motivation is enacted via the dominant meanings and recurring settings of the cultural context in which the actor participates" (p. 417). As such, academic perception along with

other academic motivation beliefs may develop differently in adolescents because their cultures may contain different values and belief systems (e.g., individualism, collectivism, time perspective, self-direction, and achievement). These values and beliefs identify what is considered important in particular cultures and what potentially influence individuals' motivation and learning (McInerney, 2008). For example, many Asian cultures emphasize educational achievement as a means of fulfilling family and social expectations, whereas western cultures place a great emphasis on academic achievement in order to fulfill students' own needs to achieve (Komarraju, KarauThus, & Ramayah, 2007). Bandura (2002) also argued that "the common human nature is at the level of basic capacities and the specialized mechanisms through which they operate, but cultures shape these potentialities into diverse forms" (p. 273). Therefore, while it is useful to be able to explain students' learning and motivation as universal phenomena, it is essential to be able to speculate how these constructs are unique in different cultural groups as emic (i.e., culture-specific) phenomena.

Consequently, researchers have attempted to understand the effect of culture on human psychological processes by comparative studies of cultural differences. Berry, Poortinga, Segall, and Dasen (1992) defined cross-cultural psychology as "the study of similarities and differences in individual psychological functioning in various cultural and ethnic groups; of the relations between psychological variables and sociocultural, ecological, and biological variables; and of current changes in these variables" (p. 2). Given this definition, cross-cultural psychology is important for two reasons: (a) it shapes our existing

theories and knowledge of human behavior, increasing their validity for people in various cultures (Matsumoto, 2001), and (b) it helps us understand, in systematic ways, how culture relates to human behavior, both individually and collectively (Berry, 1980).

Cultural dimensions and theories. According to the Dictionary of Language Teaching and Applied Linguistic, culture is defined as "the set of practices, codes, and values that mark a particular nation or group" (Richards & Schmidt, 2002, p.138). Specifically, Triandis (1996) views culture as "the shared elements that provide the standards for perceiving, believing, evaluating, communicating, and acting among those who share a language, a historic period, and a geographic location." With modification, these shared elements are passed on from generation to the next (p. 408). In developing an understanding of cultural differences, the individualism/collectivism (I /C) frameworks (Triandis, 1995; Hofstede, 1991), as well as self-construal theory (Markus & Kitayama, 1991) are two prominent frameworks in cross-cultural studies. The I/C framework conceptualizes how people are different in self-definition, goal structures, behaviors, and emphasized needs (Triandis, 1995). People in individualist cultures set their personal goals in ways that may not be consistent with their in-group goals. In a case where their personal goals are in contrast to their in-group goals, individualists will choose to pursue their personal goals and disregard their in-group goals. Individualists, moreover, base their social behaviors mostly on their own attitudes. Personal needs are more important than in-group needs for individualists. These individualist cultures include western Europe, the United

States, Canada, Australia, and New Zealand (Triandis, 2007).

In collectivist cultures, according to Triandis (1995), people see themselves as integrally related to others within their groups. They value their personal as well as their in-group goals. If a conflict exists between these sets of goals, collectivists will choose their in-group goals over their personal goals. People in collectivist societies also adopt social behaviors on the basis of group norms and pay more attention to what others in their group need rather than what they themselves need. Collectivist cultures include the cultures of East Asia, Africa, and South America (Triandis, 2007). Individualism and collectivism are sometimes further distinguished into horizontal and vertical types (Triandis, 1995). *Vertical relationship* exists in cultures where hierarchy is considered important, whereas *horizontal relationship* can be seen in cultures with more egalitarian social behaviors. Needless to say, these cultural dimensions may be relevant as themes or ways of being for large groups of people, but no groups are culturally homogeneous, and much individual variation exists in any cultural group.

Hofstede (1991) formed his theory about I/C dimensions from work on his large research projects involving a multinational corporation (IBM) in 64 countries. He also proposed additional dimensions of cultural differences. Hofstede viewed p*ower distance* as the degree of power inequality considered normal by people in an organization or institution. *Uncertainty avoidance* is the degree to which members of a society or a culture feel either comfortable or uncomfortable with uncertainty and ambiguity. In a high uncertainty avoiding

culture, people establish strict rules or laws in order to avoid such unstructured situations. In contrast, people in a low uncertainty avoiding culture prefer few rules, and are more tolerant.

In self-construal theory (Markus & Kitayama, 1991), the significant discrepancy between the independent construal and the interdependent construal lies in the relationship between self and others. Individuals with independent self-construal see themselves as separated from others such as their family members, friends, and colleagues, whereas those with interdependent self-construal view themselves as connected to others. The theory also claims that maintaining connections with others is important, especially for individuals with an interdependent view of self. People in western cultures are more likely to hold the independent view than those in non-western cultures.

Even though these frameworks are useful in studying cultural influences on behavioral and psychological process, researchers need to be aware of simply grouping cultures as dichotomous dimensions. Bandura (2002) points out that cultural grouping in dichotomous types may mask cultural variation within a particular culture, leading to great misinformation. That is because one culture comprises different subcultures (e.g., ethnic groups) as well as individuals who do not fit the over-arching cultural belief system; therefore, members in that culture may vary in beliefs and practice. He also notes that there is coexistence between individualism and collectivism. For example, people act individually and collectively in many different contexts.

Another concern for a cross-cultural study is measurement equivalence.

Conclusions about between-group differences are meaningful if the constructs studied are equivalent across those groups (Stein, Lee, & Jones, 2006). There are several major types of equivalence. The basic level is functional or construct equivalence (Fischer & Miu-Chi Lun, 2008). The behaviour or construct can be compared across cultures only if it has the same meaning and function in those cultures (Ægisdóttir, Gerstein, & Canel Çinarbas, 2008; Fischer & Miu-Chi Lun, 2008). Structural equivalence concerns whether the scale assesses the same underlying construct across cultural groups (Fischer & Miu-Chi Lun, 2008). With structural equivalence, "The items have to have the same internal structure across groups and the same items are supposed to load on the same factor in each cultural group" (Fischer & Miu-Chi Lun, 2008, p. 569). Measurement unit equivalence is the next level of equivalence, which concerns whether the measurement units of the scales are the same across cultural groups. With this type of equivalence, the measurement units are equivalent across groups. However, the observed scores cannot be compared directly across groups because although the measurement scales are identical, they might have a different origin (Ægisdóttir et al., 2008; Fischer & Miu-Chi Lun, 2008). The highest level of equivalence is full score equivalence or scalar equivalence. At this level, a valid cultural comparison can be made because "equivalent instruments at the scalar level measure a concept with the same interval or ratio scale across cultures, and the origins of the scales are the same"(Ægisdóttir et al., 2008, p. 193). According to these researchers, there are several strategies to reach or improve the measurement equivalence, such as performing proper translation techniques

(forward and back translations), examining internal structure similarity, and using factor analysis. Because this study aims to explore the relationships between procrastination and motivation beliefs and predictors of procrastination across cultures—and not to discuss mean differences in procrastination between cultural groups—confirmatory factor analysis (CFA) is used to test only the equivalence of factor structure. This issue will be addressed more in chapter four.

Bias is another concept that should be addressed in cross-cultural studies because it can lead to non-equivalence (Van de Vijver, 1998). There are three types of biases relevant to this discussion: construct, method, and item bias (Van de Vijver, 1998; Van de Vijver & Leung, 1997). Construct bias is found "when the construct measured is not identical across cultural groups" (Van de Vijver & Leung, 1997, p. 11). This type of bias can result from incomplete overlap in behaviours related to the construct being measured. As Van de Vijver and Leung (1997) and Chen (2008) noted, construct bias in this study will be addressed using CFA to detect the structure underlying procrastination and motivation belief measures. Items that do not load adequately on factors for each cultural group (i.e., Canada and Thailand) will be dropped from further analyses (see Farruggia, Chen, Greenberger, Dmitrieva, & Macek, 2004, for a review).

Another type of bias is method bias, which includes sample bias (i.e., incomparability of samples), instrument bias (e.g., stimulus familiarity), and administration bias (i.e., procedure aspects). Item bias is the third type of bias, which can be caused by poor item translation and poor wording. An item is said to be biased when people who have the same score on the construct and come from

different cultural groups do not have the same mean on that item (Van der Vijver & Tanzer, 2004). According to Van de Vijver and Tanzer, “if no direct score comparisons are intended across cultures, neither method or item bias will be a threat to cross-cultural equivalence” (p. 122).

Culture, motivation, and academic achievement. Cross-cultural psychology is witnessing a growing body of research on a variety of topics, including motivation beliefs and academic achievement (e.g., Bempechat & Drago-Severson , 1999; Eaton & Dembo, 1997; Klassen, 2004), with results showing that culture plays an important role in individuals' beliefs and practice, which in turn influence how individuals are motivated to perform academic tasks. For example, Klassen (2004) investigated mathematics efficacy beliefs and other motivation constructs including math self-concept, fear of failure, and perceived parental value of academics in seventh grade Indo Canadian and Anglo Canadian students (immigrants versus non-immigrant). He found that Indo Canadian students reported higher scores than Anglo Canadian in all areas and that self-efficacy is a significant predictor of performance for both groups. However, the students in the contrasting cultural groups reported different sources of self-efficacy. That is, past performance, emotional arousal, vicarious experience, and social persuasion significantly predicted self-efficacy in Indo Canadian students, but only the first two sources predicted self-efficacy in Anglo Canadian students.

In some collectivist cultures, a cultural belief other than self-efficacy best explains students' performance. For instance, in a study of motivation beliefs of Asian Americans and non-Asians in grade nine, Eaton and Dembo (1997) found

that fear of failure was related to academic achievement for Asian Americans but not for non-Asian students. Fear of failure was also the most predictive construct of academic achievement for Asian American students. The differences in academic motivation were perhaps due to differences in their cultural norms as well as their construal of self as noted earlier. Whereas self-efficacy can predict academic achievement of students from individualist cultures, fear of failure becomes a powerful source for collectivist students to do well. Specifically, Asian students may endeavor to achieve academically simply because failing to perform well can bring great disappointment and disgrace to their family. Heine (2004) found that western people view maintaining self-esteem as their motivation, whereas East Asians focus on maintaining *face* as their motivation. Face is viewed as the locus of dignity and prestige—"how much respect people claim for themselves or obtain from other people" (Yu, 2001). Hofstede (1991) noted, "The importance of face is the consequence of living in a society that is very conscious of social contexts" (p. 61). People in such society are concerned about how others think about them and must meet others' standards to secure face (Heine, 2004).

Test anxiety is also influenced by different family and social contexts. In societies where parental academic expectations are high and test performance is extremely important for future education and vocation, students are more likely to display a high level of test anxiety (see Bodas & Ollendick, 2005 for a review). For example, Arab adolescents in Israel in Peleg-Popko, Klingman, and Nahhas's study (2003) reported higher test anxiety than Jewish adolescents. The authors explained that in the collective society of Arabs, adolescents are raised to comply

with family demands and conform to parent's expectation—their children need to excel in school to make a better life. Thus, taking a test becomes a threatening situation for these students. On the other hand, test anxiety, based on research findings in many different cultures such as North American and Europe is said to be a common phenomenon across cultures (Bodas & Ollendick, 2005; Seipp & Schwarzer, 1996) than trait anxiety.

In academic settings, students move towards particular tasks or engage in different activities relevant to their value and goal orientations. For example, in their study of value and academic motivation, Dietz et al. (2007) found that adolescents who preferred social activities and leisure time had a high tendency to delay academic tasks in favor of leisure activities. They also found that values and procrastination together affected adolescents' decisions on what to do when their social and learning goals came into conflict. That is, adolescents who valued effort and success preferred learning activities to leisure ones.

Academic Motivation and Thai Culture

According to considerable previous research, family and cultural aspects seem to have a great influence on student motivation (Triandis, 1995). Specifically, family or parental beliefs such as parent aspiration and expectations for their children's academic success have been found to affect how students view motivation and achievement as noted:

> Parents who value academic achievement often have children who value academic achievement as well. Some of this association is probably due to direct transmission of values from parents to their children through speech

> (i.e., parents telling their children how important education is) and deeds (Urdan, Solek, & Schoenfelder, 2007, p. 9)

Thai culture, educational beliefs, and practices differ in several ways from western culture, beliefs and practices. Western cultures is more individualistic (Triandis, 1995), placing great emphasis on competition, autonomy, and independence (Singelis, Triandis, Bhawuk, & Gelfand, 1995; Triandis, 1995). In families high on individualism, parents may view that "achievement for individualists is individual achievement, and is often seen as a means for self-glory, fame, and immortality" (Triandis, 1995, p. 20). The goal of education is to help the child to "stand on their own feet" (Hofstede, 1991, p. 51). Children in these families, therefore, are expected to learn for their own improvement, not for meeting their families' expectation (Hofstede, 1991). Thai culture, in contrast, has demonstrated low individualism and low masculinity but high power distance and high uncertainty avoidance (Hofstede, 1991); that is, Thailand is regarded as a collectivist culture that has less assertiveness and competitiveness, emphasizes social hierarchies, and has less tolerance for uncertainty and change. Triandis (1995) has called this type of society *vertical collectivism*. However, Triandis (2004) provides an additional perspective when he labels Thailand as a *loose culture* in which there are few norms, rules, and standards and when people do not follow rules, they are less likely to be criticized and punished. He further noted:

> (In Thailand) when people do not do what they are supposed to do, other people may just smile and let it go. Thailand is not at all isolated, since it is sandwiched between the major cultures of China and India. People have

> different points of view about "correct" behavior, so there is much tolerance when others do not behave "appropriately" (p. 92)

According to Hofstede (1991), in most collectivist cultures with high power distance, people have close relationships with their group members such as family and extended family. Children are taught to obey and respect parents and elders at home and teachers at school. In addition, children are expected to achieve to fulfill family's expectation (Triandis, 1995). Reisinger and Turner (2003) identified some aspects of Thai culture that are consistent with characteristics of collectivist cultures. That is, Thai people focus on maintaining social harmony and typically believe in the importance of showing respect to others with higher social status, such as parents, teachers, and elders. Thais are also concerned about *face-saving.* They, therefore, are taught to avoid judgments and direct confrontation (Wongsri, 2004). Shawyun and Tanchaisak (2005) conducted a study to identify core values of Thai undergraduate students and found that the students placed more emphasis on the relationship orientations (e.g., interdependence orientation, fun-pleasure orientation, and smooth interpersonal relationship orientation) than on the orientations that "develop their capability and competence through education and achievement-task orientation" (p. 5).

Because motivation and success are influenced by culture, one would expect that cultural dimensions and social and educational values may influence how Thai students are motivated to achieve. Research demonstrates that collectivist beliefs in group orientation and respect play a part in Thai students'

academic motivation and learning behavior. For example, Teowkul et al. (2009) noted that Thai students pursue higher education because they want to fulfill the esteem needs of their family. In return, they will receive positive emotions such as love, affection, and satisfaction from their family. The students may also pursue higher education because of peer pressure as they want to be a part of the group: "In Thai culture the group is the primary organization as a consequence of their living in extended families" (p. 32). Wongsri (2004) interviewed Thai undergraduates in her study investigating the differences between Thai and Australian students for components of self-regulation of learning. She found that Thai students were concerned that their failure would affect their family and that they worked hard to avoid bringing shame and public humiliation to their family. Similarly, in a study of avoidance motivation across the United States and Thailand, Dejitthirat (2004) found that Thai students adopting avoidance goals emphasized social relationships more than twice as often as their American counterparts did. Such goals included "Avoid arguing with my sister," "Avoid making my parents worried," and "Try not to become a burden to my group" (p. 87). Dejitthirat also found that compared to American undergraduate students Thai students reported a significantly higher level of test anxiety. Thus, literature on Thai academic motivation shows that Thai students, similar to those in other collectivist cultures, are closely connected to their group such as family and it influences their motivation in that they strive to excel in school to meet parents' high expectation (Kumar & Maehr, 2007). However, students in cultures where

parents have high expectations tend to have a high level of anxiety related to task performance or evaluation situations as shown above.

From the perspectives of outsiders, Deveney (2005) investigated the learning aspects of Thai students in an international school in Thailand. By interviewing foreign teachers in that school, Deveney found that Thai students were well-behaved, hard-working, non-egocentric, and had a positive attitude toward their work. Moreover, the interviews with Thai teachers in the same school raised the issue of *face* and *teacher expectation*. That is, "In Thai schools children are taught to be silent in class so they can listen to the teacher and in this way 'face' is never lost" (p. 164). Note that studies of Thai students' motivation, particularly from a cross-cultural perspective, mostly involved adult populations. The perspectives of school-aged students have rarely been examined, which may prevent us from having a full understanding of the issues in such a particular culture. This study thus addresses the research gap by using qualitative interviews to investigate Thai adolescents' motivation.

Mixed Methods Research

One suggestion in making culturally comparative research more meaningful is to combine quantitative and qualitative methods to gain a better understanding of cross-cultural phenomena. With the combination of these methods, we can extend our knowledge as well as validate our interpretation by using more than one measure (Bempechat & Drago-Severson, 1999; Harkness & Keefer, 2000). The combined quantitative and qualitative methods are also known as mixed methods. Mixed methods is broadly defined as "research in which the

investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or a program of inquiry" (Tashakkori & Creswell, 2007, p. 4).

In mixed methods research, researchers use both quantitative and qualitative approaches to address the research question because these two approaches have different strengths and weaknesses (Creswell & Plano Clark, 2007). For example, results from quantitative research, based on sufficient sample, can be generalizable. However, testing theories is the main focus of this approach; the research may leave out some aspects of the phenomena being studied. As for strengths of qualitative research, researchers obtain rich information in local contexts and the information is based on "the participants' own categories of meaning" (Johnson & Onwuegbuzie, 2004, p. 20). The results, however, may not be generalizable to other settings. Therefore, using the two approaches in combination provides researchers a greater understanding of phenomena in their study. This explains why mixed methods research has been recently recognized as the third research paradigm (Johnson & Onwuegbuzie, 2004).

Mixed methods research is especially appropriate for cross-cultural studies as a combination of methods allow researchers to make better sense of particular cultural contexts as research settings as well as to validate the interpretation of data (Tashakkori & Teddlie, 1998), improving the reliability and the validity of research. For example, qualitative methods, such as cultural observations, were used to guide the interpretation of survey data in studies of Iranian adolescent

behavioral intentions (See Tashakkori & Teddlie, 1998 for a review). In a cross-cultural study of parents, children, and schools, Harkness et al. (2006) asked parents to complete questionnaires for assessing temperament in children of different ages, and also interviewed the parents. Using a mixed method approach, the authors pointed out that "one of the advantages of the mixed-method approach used in our study is that differences identified in particular narratives can also be seen through the prism of quantitative analysis, demonstrating that parents' uses of various descriptors are not random but rather are related to culture, age of the child, or both" (p.74). Therefore, a mixed methods approach seems to help researchers to have a greater understanding of cultural phenomena.

A mixed methods approach is also useful to develop and validate a research instrument for specific cultures of interest. For example, to develop a culturally sound instrument, Hitchcock et al. (2006) employed qualitative (interviews) and quantitative (rating scales) methods to identify and validate appropriate social behaviors of adolescents in Sri Lanka. In the first phase, they asked adolescents and teachers to describe characteristics of acceptable and unacceptable behaviors for boys and girls, with three themes emerging (i.e., suitable behavior, unsuitable behavior, and behavior that reflect personal/ interpersonal needs) from the analysis. The findings also showed that both male and female adolescents defined unacceptable behaviors differently and that girls more likely complied with culturally-defined suitable behaviors than did boys. In the second phase, they developed self-report measures based on qualitative data, to assess perceived competencies and perceived values of the competencies in 611

Sri Lankan adolescents. Because factor analysis and MANOVA yielded consistent results, the authors concluded that this culturally validated instrument is appropriate to be used with other samples of the same culture.

Research has shown the advantages of using mixed methods approach to gain knowledge in cultural contexts. The next section discusses how a mixed methods approach is used to understand procrastination and the role of motivation in Thai secondary students.

CHAPTER THREE: METHODOLOGY

The purposes of this dissertation are twofold. The first is to explore the relationships between procrastination and motivation constructs (i.e., self-efficacy, self-efficacy for self-regulated learning, self-esteem, and test anxiety) in western and non-western cultures (Canadian culture and Thai culture). The second is to provide a deeper understanding of procrastination and motivation constructs in Thai adolescents. Accordingly, this dissertation uses an explanatory sequential two-phase mixed methods design to address adolescent procrastination. This design is appropriate to use when qualitative data is needed to explain initial (significant or non-significant) results. Using this design, researchers collect and analyze quantitative or qualitative data in the first phase. Then, subsequent quantitative or qualitative data collection and analyses are conducted in the second phase for needed additional explanation. (See Figure 1 for the explanation model).

The mixed methods approach was suitable to address method and item bias. I matched the Canadian sample with the Thai sample according to relevant subject and context variables such as participants' age, educational levels, and school types—co-educational and urban schools (Van de Vijver, 1998). Additionally, I consulted the researchers who were involved in data collection in Canada to ensure that the procedures for administering, scoring, and interpreting an instrument were similar (Van de Vijver, 1998). Another way that was helpful to reduce method bias was that I interviewed the Thai informants (e.g., Thai students, teachers, and researchers) to ensure that the measure format was

appropriate to be used with Thai students (Van de Vijver, 1998). According to Van de Vijver and Hambleton (1996), item bias can be examined by using an independent back-translation in the application of the instrument. In this study, the back-translation technique was performed in a careful manner (e.g., using multiple translators and checking for the quality of the translation by a native speaker with expertise in the field) in order to address item bias that may be caused by poor translation or poor wording.

In this dissertation, a quantitative study (Study 1) was followed by a qualitative study (Study 2) to explain quantitative results and to obtain a deeper understanding about Thai adolescents' procrastination. Then, quantitative and qualitative findings were integrated to form a better understanding of the issues. Integration of mixed methods findings is essential because it helps the researchers make the most of the data collected. By linking the findings from the two research methods, the researchers can gain insight into how these data inform each other, how one helps to clarify the other, or how the findings are contrasted with each other (Bryman, 2007). The method of each study is described in the next section and the integration of the two data sets is discussed in chapter 4.

Study 1

Previous research has shown that individuals' academic motivation and behavior are influenced by beliefs and practices respected in particular cultures. Research questions and hypotheses for this study were based on the procrastination and motivation literature with attention to the cross-cultural literature.

Research Questions and Hypotheses

The purpose of the quantitative Study 1 is to understand adolescent procrastination and motivation beliefs, and how these constructs interact with one another to impact students' academic achievement in western and non-western cultures (Canadian versus Thai). The following research questions are to be answered:

1. What are the relations between academic procrastination and self-efficacy, self-efficacy for self-regulated learning, self-esteem, and test anxiety in Canadian and Thai adolescents?

2. What is the relation between academic procrastination and academic achievement in Canadian and Thai adolescents? Are there significant differences in procrastination of Canadian and Thai adolescents based on their achievement levels?

3. What motivation constructs appear to be significant predictors of academic procrastination for Canadian and Thai adolescents?

Because high motivation beliefs are believed to be functional, it is hypothesized that for both cultures, self-efficacy, self-efficacy for self-regulated learning, and self-esteem will be negatively associated with procrastination. It is also hypothesized that procrastination will be positively correlated with test anxiety.

Because the link between procrastination and academic achievement in past research was found, it is hypothesized that procrastination is negatively associated with GPA. It is further hypothesized that there will be significant

differences in procrastination of adolescents based on their achievement levels. In particular, adolescents who have higher GPA will less likely to procrastinate than those with lower GPA in both cultural settings.

Based on previous findings and Bandura's contention that “the common human nature is at the level of basic capacities and the specialized mechanisms through which they operate, but cultures shape these potentialities into diverse forms” (2002, p. 273), it is hypothesized that self-efficacy and self-efficacy for self-regulated learning will be significant predictors of procrastination for both groups. Based on previous cross-cultural research showing that individuals in western cultures mostly rely on self-relevant constructs (e.g., self-esteem) for motivation, it is further hypothesized that self-esteem will be a strong predictor of procrastination for Canadian adolescents. On the other hand, individuals in non-western cultures focus on collective goals (e.g., striving to avoid family shame) to stay motivated. Particularly, research has shown that Thai students strive to excel in school to meet parents’ high expectation (Wongsri, 2004) and report a higher level of anxiety when compared to their American counterparts (Dijitthirat, 2004). Based on these findings, it is hypothesized that test anxiety will strongly predict Thai adolescents' procrastination.

Method

Participants. This study comprised 312 Canadian and 401 Thai adolescents. Canadian adolescent data were collected from two public secondary schools in an urban center in western Canada. Some aspects of these data have been previously reported (Klassen et al., 2009). The two Canadian schools were

ranked in the middle third of all high schools in the city and in the upper third of high schools in the province (Klassen et al., 2009). Van de Vijver and Leung (1997) recommend using demographic characteristics to match the samples for a valid comparative study of cultural differences. Thus, participants from Thailand were students from two public upper secondary schools in an urban area in North-Eastern Thailand. Approximately 67% of the Thai participants were female and 33% male. The age of these participants ranged from 14-20 years with the mean age of 16.26. For Canadian participants, 53% and 47% of these participants were female and male. The age ranged from 14-19 years with the mean age of 16.06.

Procedure and Instruments. Twelve public secondary schools located in an urban area of Nakhon Ratchasima province, which is located in the northeast of Thailand, were identified. However, four schools were dropped from this study because two of them were not co-educational schools and the other two schools were small with a small number of high school students. In total, there were eight secondary schools to be contacted for research participation. Next, letters requesting participation and providing an introduction to the study were mailed to the school principals. Of the eight schools, only one refused to participate in the study; therefore, two schools were randomly selected from the seven schools that were willing to take part in this study. Once the two participating schools were identified, information letters and consent forms were given to parents of secondary students in these schools. Parents were asked to give consent for their children to participate in both Study 1 and Study 2. Students with a parental consent completed a 47-item survey containing procrastination measure and four

motivation measures: self-esteem, academic self-efficacy, self-efficacy for self-regulated learning, and test anxiety. Demographic information such as age and gender and reported GPA as an indicator of performance were gathered as well. Students who obtained parental consent and who agree to participate in Study 2 were further contacted for a semi-structured interview.

Procrastination. Tuckman's 16-item procrastination measure (1991) was used to assess student procrastination. Tuckman's procrastination measure is considered an appropriate tool to investigate procrastination as it provides a valid and reliable measure of "the tendency to waste time, delay, and intentionally put off something that should be done" (Tuckman, 1991, p. 479). Tuckman (1991) used this scale in his concurrent validity study and reported a Cronbach's alpha reliability of .86 and evidence of validity shown through a significant relationship between the procrastination scale and the behavioral measure of self-regulated performance in homework completion. Students responded to statements such as, "I delay finishing jobs, even when they're important," and "Even though I hate myself if I don't get started, it doesn't get me going," on a 4-point scale ranging from 1 = *that's really not me* to 4 = *that's me for sure.* Previous research on procrastination of college students (e.g., Howell, Watson, Powell, & Buro, 2006; Klassen et al., 2008) used Tuckman's scale and reported similarly adequate reliability coefficients (α = .90, and .86, respectively). Even though the 16- item scale was originally used among college students, other researchers (i.e., Klassen et al., 2009) used the scale to explore adolescents' procrastination in cross-cultural contexts, and reported the reliability coefficients of Tuckman's procrastination

measure of .81 and .88 for Singaporean and Canadian adolescents, respectively.

Self-Esteem. Rosenberg's Self-Esteem Scale (SE; Rosenberg, 1979) was used to assess students' self-esteem. Originally developed to assess global self-esteem of adolescents, this scale consists of ten items measured on a 4-point scale ranging from 1 = *strongly disagree* to 4 = *strongly agree*. On this scale, five negative statements include "At times, I think I am no good at all," and "I feel that I do not have much to be proud of." Five positive statements include "I feel that I have a number of good qualities," and "I take a positive attitude toward myself." There has been a concern whether a one or two-factor model (positive and negative self-worth) of this scale fits the data better. Therefore, a concurrent validity study of SE was conducted (Hagborg, 1993) in which SE was compared with the Self-Perception Profile for Adolescents (SPPA), a multidimensional scale. The results demonstrated that global SE, positive SE, and negative SE similarly correlated to SPPA, and global SE accounted for the most variance (56% of the variance). Using Spanish undergraduates as a sample, Martín-Albo, Núñez, Navarro, and Grijalvo (2007) also found that the one-factor model of SE to be a strong indicator of adolescents' global self-esteem as Rosenberg concluded (Hagborg, 1993). In terms of construct validity, Rosenberg's Self-Esteem Scale (SE) has been found to relate to a 6-item Guttman scale of depressive affect in The New York State study and peer rating (Rosenberg, 1979). SE has been found to be highly reliable in a variety of samples, including adolescents (e.g., Schmitt & Allik, 2005). Rusticus, Hubley, and Zumbo (2004) compared the English version of the SE across countries (i.e., the United States, Canada, and New

Zealand). The findings showed that the scale was unidimensional for each sample and that all 10 items loaded greater than .40 in each country. The authors concluded that this scale can be used to make comparisons of self-esteem across these three countries. Moreover, this scale was used to measure self-esteem in baccalaureate nursing students in Thailand, with a reliability coefficient of .85 reported (Ross et al., 2005). However, the one-factor and the two-factor models of SE were tested to see which one would fit the data better across Canada and Thailand.

Academic Self-Efficacy. Students' self-efficacy for learning and performance was measured using the 5-item Self-Efficacy scale adapted from the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich, Smith, Garcia, & McKeachie, 1991). The MSLQ is a self-report instrument used to assess students' motivation and self-regulated learning (e.g., the use of learning strategies) in specific contexts (Pintrich, 1999). Originally, the MSLQ self-efficacy scale consisted of eight items—the three expectancy-value items and the five self-efficacy items. For the adapted version used in this study, the three expectancy-value items were dropped from the original scale, and the remaining five self-efficacy items were re-phrased with the preface "I am confident" and the suffix "in my class" (Klassen et al., 2008; Klassen & Cetinkale, 2009). The adapted self-efficacy scale is a better theoretical fit with the concept of self-efficacy, because it measures perceptions of capability rather than ability. In a reliability and validity study conducted by Pintrich et al. (1993), MSQL self-efficacy showed a high reliability coefficient of .93. The results from past studies

also displayed acceptable reliability (Cronbach's alpha reliability is above .80) in adolescents and adults both in western and non-western settings (e.g. Klassen et al., 2008; Klassen & Cetinkale, 2009). Each item on the self-efficacy scale is measured by a 7-point scale, ranging from 1 = *not at all true of me* to 7 = *very true of me*. Five items measuring self-efficacy include "I am confident I can understand the basic concepts taught in most of my classes," and "I am confident I can do an excellent job on the assignments and tests in my classes."

Self-Efficacy for Self-Regulation. Students' self-efficacy for self-regulation was assessed using an 11-item instrument with a 7-point scale (i.e., 1 = *not well at all* and 7 = *very well*) from Zimmerman et al. (1992). This scale measures students' judgment of their capability to make use of self-regulated learning strategies. Students responded to items such as, "How well can you motivate yourself to do homework/classwork?" and "How well can you finish assignments by deadlines?" The measure has been tested for construct and concurrent validity using a sample of 3,760 students from grades 4-11 (Usher & Pajares, 2008), with the results demonstrating correlations between scores on the subscale as well as correlations between the self-efficacy for self-regulated learning measure and other motivation constructs—self-efficacy, self-concept, task goal orientation, optimism and feelings of authenticity, and apprehension and anxiety. The authors then suggested that "the items provide a sound measure with which researchers can continue to assess students' beliefs about their self-regulatory capabilities" (p.459). The measure has been recently validated in a longitudinal study of perceived self-efficacy for self-regulated learning in Italian adolescents (Caprara

et al., 2008) and high reliability coefficients were reported (α = .83 at Time 1, .85 at Time 2, .86 at Time 3, .84 at Time 4, and .87 at Time 5). Other studies have also found high reliability coefficients ranging from .82 to .87 (Klassen et al., 2008; Klassen & Cetinkale, 2009; Zimmerman et al., 1992).

Test Anxiety. Text Anxiety Scale from the Motivated Strategies for Learning Questionnaire (MSLQ) was used to measure "students' negative thoughts that disrupt performance and affect and psychological arousal aspects of anxiety" (Pintrich et al., 1991, p.15). The scale includes worry and emotionality components. In a reliability and validity study conducted by Pintrich et al. (1993), this scale showed a high reliability coefficient of .80. The Test Anxiety Scale has been found to be reliable in diverse samples, with reliability coefficients of .83 in Canadian adolescents and .73 in Singaporean adolescents (Klassen et al., 2009). Moreover, the Test Anxiety Scale was used to measure students' test anxiety in a study investigating avoidance goals in American and Thai undergraduates. In this study, Cronbach's alpha reliability in American students was .87, whereas Cronbach's alpha reliability in Thai students was .84. The scale consists of five items, for example, "When I take a test I think about items on other parts of the test I can't answer," and "I have an uneasy, upset feeling when I take an exam." Participants rated their cognitive and emotional concerns about academic performance on a 7-point scale, with 1 = *not at all true of me*, and 7 = *very true of me*.

Academic achievement. A self-reported GPA on 100 point scale and on 4.0 point scale were collected from Canadian and Thai adolescents, respectively.

However, 349 adolescents (85.11%) from Thailand reported their GPA, whereas 52 students (14.89%) did not report their GPA. In Canada, 8 out of 312 adolescents (2.56%) did not provide their GPA. Consequently, the analysis in this study with respect to academic achievement were conducted with only adolescents with available GPA (N = 349 and N = 304 in Thailand and Canada). This represents a study limitation that will be addressed in a later chapter.

Translation of the Scales

Translating instruments is an important process that requires careful attention from researchers to guarantee valid conclusions in culturally comparative research (Kristjansson, Desrochers, & Zumbo, 2003). The English version of procrastination and motivation instruments in this study were translated into Thai using back-translation procedures, a well-known translation assessment procedure in cross cultural survey research (Harkness, Van de Vijver, & Mohler, 2003). Using this translating process, researchers first carefully prepare research instruments in an original language. Then, a bilingual translator translates the instruments in the target language and a second bilingual translator independently translates the instruments back to the original language. The original and back-translated versions are compared to identify discrepancies and comparability. Differences found between the two versions are resolved until the translators agree that the two versions are similar in meaning (Brislin, 1993; Cha, Kim, & Erlen, 2007; Kristjansson et al., 2003; Pena, 2007). An alternative way to ensure the accuracy of the translated instrument is to have a native language speaker review the translation (Pena, 2007). The back-translation procedure is widely used

as it allows researchers to address the equivalence issue in cross-cultural studies by examining "descriptions and measures of concepts as they are translated across languages" and to have control over the preparation of the research materials (Brislin, 1993).

Because knowledge of the source and target languages as well as of the research areas are key components when translating instruments (Cha et al., 2007), the back-translation in this study was performed by translators who can speak both English and Thai and who have experience with survey research. In the translating process, the use of multiple translators (e.g., instruments are translated by at least two independent students) is also recommended for higher quality of instrument translations because errors and different interpretations can be detected (Guillemin, Bombardier, & Beaton, 1993; Thato, Hanna, & Rodcumdee, 2005). For the Thai translation, the translators were the researcher of the study and a doctoral candidate in Special Education at University of Alberta, who was a teacher in Thailand for many years.

The first step for the back-translation in this study was that the translators simultaneously translated the scales from English into Thai. Then, they compared and discussed the two Thai versions of the scales for the quality of Thai translation. Any differences in translation were resolved through discussion among the translators (Yam, Lopez, & Thompson, 2004). With agreement on wording and meaning between the translators, the final Thai version was obtained for the back-translation. Second, the Thai version was sent to a bilingual back-translator who translated the scales back into English (Cha et al., 2007). The last

step of the back-translation procedure was to check for discrepancies and comparability of the two versions in English (the original scales and the back-translated scales). Similarities in the versions indicate good quality of the translation and suggest equivalence of the English scales and the Thai scales (Brislin, 1970; Hambleton, Merenda, & Spielberger, 2005). After the back-translation was completed and the final version of the Thai scales was deemed adequate by me as the researcher and the translators, the scales were reviewed by the Dean of the Faculty of Liberal Arts at a university in Thailand who has expertise in motivation and cross-cultural studies. Then, a pilot study using these scales was conducted in a small group of Thai secondary students to check for participants' understanding of the scales.

The translation of the procrastination and motivation scales in this study ensure instrument equivalence across languages by employing various techniques suggested in translation literature: (a) the use of back-translation, (b) the use of multiple translations, (c) the use of a native-English speaker to check for equivalence between the original and the translated measures, and (d) the use of a pretest technique in the target population. However, due to limited resources, a committee approach (e.g., a group of bilingual experts review and evaluate translated instruments) was not conducted, even though some researchers recommend this approach to be used with a combination of the back-translation method (Brislin, 1970; Cha et al., 2007; Kristjansson et al., 2003).

Data Analysis Plan

The quantitative study examined the relationships between procrastination

and motivation beliefs (i.e., self-efficacy, self-efficacy for self-regulated learning, self-esteem, and test anxiety) and academic achievement across Canada and Thailand. It also explored significant predictors of high school students' procrastination across two cultures. Therefore, data analysis included calculating bivariate correlations to explore the relationships of the variables in each group. An independent sample t-test was also conducted for each cultural setting, to explore differences in procrastination among adolescents based on their achievement levels (High and Low). Moreover, multigroup structural equation modeling was used to explore the combined factor structure of the variables and to test the relative importance of the associated variables across cultures.

A major concern of a cross-cultural study is measurement equivalence because differences between cultural groups are not easily interpreted and conclusions about the differences are not meaningful unless the measurement of constructs studied is equivalent across those groups (Stein et al., 2006). In this study, structural equation modeling (SEM) was thus used to test the measurement invariance and to examine the relationships among variables in each setting through single-group and multi-group confirmatory factor analyses (CFA) and multi-group path analyses. Because the main purpose of this study was to explore the relationships between procrastination and motivation constructs and predictors of procrastination in Canada and Thailand, CFA was used to test only the equivalence of the factor structure of procrastination, academic self-efficacy, self-efficacy for self-regulated learning, self-esteem and test anxiety for each cultural group and the combined group. That is, CFA models tested whether a) the

proposed one or two-factor model fit the data well across groups and b) the factor loadings and the factor variance of the variables were similar across groups. The invariance of error variance was not tested because it was "an overly restrictive test of the data" (Yin & Fan, 2003, p.274). Moreover, scalar equivalence (i.e., the highest level of equivalence that allows a direct comparison of scores across cultural groups) was not tested because this study did not investigate differences in procrastination and motivation scores across cultures.

After establishing the factor structure invariance, multi-group path analyses were performed to investigate the relations among all variables in each setting. (See Figure 2 for a proposed model of the relationships among the variables for each culture). Maximum likelihood estimation was used to estimate the parameters. This procedure "estimate[s] the values of the parameters that would result in the highest likelihood of the actual data matching with the proposed model" (Meyers, Gamst, & Guarino, 2006, p.556). In model evaluation, chi-square test was used to test the difference between the relationships in the hypothesized model and those in the actual data. A non-significant chi-square (χ^2) demonstrated that the model fits the actual data (Byrne, 2009; Meyers et al., 2006). However, when the sample size is large, the chi-square statistic is "a highly sensitive statistical test, but not a practical test, of model fit (Cheung & Rensvold, 2002, p. 234). Simply said, it can detect small discrepancies between the hypothesized model and the actual data set and suggests the lack of fit (Meyers et al., 2006). Due to the χ^2 limitation, the multiple descriptive fit indices such as relative χ^2/df, Comparative Fit Index (CFI), and Root Mean Square Error of

Approximation (RMSEA) were also used to evaluate the model fit (Bentler, 1990; Byrne, 2009). For the relative χ^2/df, a value < 3.0 indicates that the model fits the data well. As suggested, CFI > .90 indicates a good fit; CFI = .80 to .89 indicates adequate fit; CFI = .60 to .79 demonstrates a poor fit; and the CFI < .60 demonstrates a very poor fit. Moreover, RMSEA has been strongly recommended for a routine use as "one of the most informative criteria in covariance structure modeling" (Byrne, 2006, p.100). Its value should be less than .08 to indicate a good fit (Byrne, 2009).

Study 2

Study 2 involves qualitative data collection and analysis. The purpose of this study is to extend and explain the statistical quantitative results from Study 1 in more depth. To accomplish this, individual interviews with Thai students were carried out, emphasizing their experiences of academic procrastination. In this explanatory mixed methods design, the two data types (i.e., quantitative and qualitative data) were connected in such a way that the analysis of quantitative data led to qualitative interviews (Creswell & Plano Clark, 2007); consequently, a semi-structured interview protocol for this study was developed based not only on procrastination and motivation literature, but also on results from the initial quantitative study. Additionally, students can provide information that might go beyond the initial questions to allow me to gain insight into the phenomenon (Klassen et al., 2008).

In addition to providing complementary results to the quantitative study, this study aims to understand Thai adolescents' procrastination in more depth. The

relationship of procrastination and other motivation beliefs has been well established from quantitative research in western cultures. There is insufficient research, however, that employs a qualitative analysis approach to shed light on these particular areas, especially in non-western contexts. Bempechat and Drago-Severson (1999) suggest:

> Because qualitative methodologies focus on individuals' meaning-making, experiences, and understandings in context, these will illuminate not only the deeper meanings that children attach to their experiences in school, but also allow us to listen closely to the stories and narratives of their experiences. (p. 306)

Relationships among the key variables in the current study have rarely been investigated across cultures, and never been investigated in the Thai culture that is embedded in collectivism with social hierarchy (Hofstede, 1991). Cultural values (e.g., family's emphasis on the importance of education and achievement) in such a collectivist culture may influence motivation beliefs in Thai adolescents.

Three aspects of procrastination are the focus of Study 2: (a) students' experience of procrastination in academic domains and the impact of procrastination on students' academic life, (b) the role of academic motivation (e.g., self-efficacy) in students' procrastination, and (c) the influence of cultural dimensions (e.g., individualism/collectivism) on students' motivation. The qualitative study addresses three research questions:

1. How do Thai students describe academic procrastination and its impact on their lives, especially in academic domains?

2. What do Thai students say about the role of academic motivation (e.g., self-efficacy) in procrastination?

3. How do cultural dimensions (e.g., individualism/collectivism) influence students' motivation and procrastination practices?

Method

The qualitative study explored procrastination with secondary students at two schools in Thailand in order to further develop the understanding of Thai adolescent procrastination from the quantitative findings.

Participants. Participants for the individual interviews were 14 Thai students who completed the quantitative survey, who had parental consent, and who agreed to participate in the study. Students were selected using typical case sampling and stratified purposive sampling. Typical case sampling is used when typical cases are of interest to researchers, while stratified purposive sampling is applied to identify cases of interest for in-depth investigation (Newman, 2007). Stratified purposive sampling is a common mixed methods sampling technique in which “the researcher first identifies the subgroup of the population of interest and then selects cases from each subgroup in a purposive manner” (Teddlie & Tashakkori, 2009, p.186). Typical case sampling was used in the first step by selecting students who could provide adequate information on procrastination based on scores from the procrastination measure in Study 1. Thus, students who reported having less experience with procrastination as well as very extreme cases were excluded from this analysis as the latter group might not be representative of the population. Stratified purposive sampling was used in selecting students with

high and low GPA. GPA is used as a criterion for selecting participants for in-depth interviews because it is an indicator of academic achievement and has been found to be significantly associated with procrastination (Klassen et al., 2008).

In this study, I was particularly interested in understanding procrastination and motivation patterns in low and high achieving students because procrastination has been found to correlate with assignment and exam grades (Elvers, Polzella, & Graetz, 2003; Steel et al., 2001; Tice & Baumeister, 1997); however, some studies found no relation between procrastination and academic performance (e.g., Mendelson, 2007). Interviews with these particular groups of students might provide knowledge to help understand the inconsistent results. In addition, procrastination appears to be associated with academic motivation, which has been found to differ among students with high and low performance. That is, high achieving students are said to be highly motivated towards their learning; for example, they put effort into tasks and frequently use learning strategies (Pintrich & De Groot, 1990). In contrast, students with low performance tend to show low effort, low persistence, and low use of cognitive and meta-cognitive strategies. Thus, procrastination might develop differently in high and low achieving students.

To maximize the information about Thai adolescents' procrastination, further stratifying was done by gender, age, and school. Using stratified purposive sampling, I might be able to capture the main differences between high and low achieving students and possibly understand common patterns of the phenomenon that may emerge from the study (Patton, 2002).

Procedure. The interview process averaged approximately 30-45 minutes and took place at students' schools. Data were collected through individual interviews because this strategy allowed for one-on-one interaction and depth of discussion. This helped me as the researcher clarify the answers of my participants and ask for more information if necessary. Simultaneously, participants can ask for clarification of unclear interview questions (Teddlie & Tashakkori, 2009). In cross-cultural and multicultural research, open-ended interviews allow for greater depths in exploring topics with which participants are not familiar (Teddlie & Tashakkori, 2009).

In this study, I prepared an interview guide in advance with questions related to the research themes: procrastination, academic achievement, academic motivation, and cultural dimensions; however, new questions could be brought up during interviews (Bernard, 2000; Patton, 2002). This semi-structured type of interview allows me to control the interview process by using interview guides, which ensure reliable and comparable qualitative data (Bernard, 2000). The flexibility of this approach also provides an advantage in that I may gain new insights by following new leads, leading to expansion of the literature on procrastination.

The interview questions were developed with reference to procrastination and motivation literature as well as the initial quantitative findings. The prompts of each question were also used to encourage participants to provide more information (Bernard, 2000). The interview questions and the prompts were reviewed by experts in the field. Then, I translated the interview questions into

Thai. Additionally, a pilot interview with a small number of Thai students was conducted to examine the clarity of questions.

The semi-structured interview protocol (See Appendix B) consisted of several sections: demographic information (age and gender etc.); students' understanding of procrastination (e.g., *What does "procrastination" mean to you?,* and *Are you constantly putting things off?*); antecedents of procrastination (e.g., *Why do you procrastinate?*); consequences of academic procrastination, more particularly in an academic domain (*What are consequences of procrastinating?*); the roles of motivation beliefs related to procrastination (e.g., *How does your confidence to complete your class assignments influence your procrastinating?*); and the influence of Hofstede's (1991, 2001) cultural dimensions (e.g., individualism/ collectivism) on students' motivation beliefs. (e.g., *How does your family view achievement?, and How does your family view your procrastination?*)

Data Analysis Plan

Study 2 employed a qualitative analysis approach to investigate procrastination in Thai students. In qualitative research, transcribing, reading and coding are important processes. In order for rigorous and trustworthy data analysis, several steps have been suggested for researchers (Creswell, 2003; Creswell & Plano Clark, 2007). In this study, the interviews were initially conducted in Thai, recorded, and transcribed. Initial transcribing of a small number of interviews was conducted during the data collection process because it allows for reflection on the quality of the interview process as well as the issues

of the research (see Ezzy, 2002, for a review). The Thai transcripts were then translated into English. For the accuracy of translation, the other two bilingual students who assisted with back translation and I translated a few Thai transcripts into English. The translated transcripts were compared and about 99% of the agreement on translation was reached. Thus, I proceeded to translate the rest of the Thai transcripts. Throughout the process of data analysis, the translated transcripts were used (Small et al., 1999). Prior to coding data, all translated transcripts were read through for general understanding of students' experiences of procrastination and overall meaning. Notes about the data, relevant topics that occur, and similarities and differences in participants' views were made. These notes and thoughts would be useful for the following stage of data analysis (Flick, Von Kardorff, & Steinke, 2004).

Content analysis was used as an analytical strategy in this study, because it allows the researchers to develop categories/codes prior to going through the interview transcripts, and because it is used to confirm or test a preexisting theory (Bernard, 2000; Ezzy, 2002). Additional codes/categories can be obtained through repeated readings of the interview transcriptions as well. Therefore, this study did not only employ deductive analysis in which data were analyzed according to preexisting theory but also used inductive analysis as concepts, patterns, categories, and themes would be identified through the coding process (Ezzy, 2002; Patton, 2002).

According to prior theoretical knowledge about procrastination and motivation constructs, predefined categories/theoretical codes were developed

before data were analyzed (Bernard, 2000), resulting in 42 codes for the basic of subsequent analysis procedures. Prior to the coding process, an expert in motivation and procrastination reviewed these codes as a way to show validity of content-analytic data (Webber, 1990). Once the expert agreed upon the codes and the definitions or concepts, these codes were then pretested on a few transcripts before being systematically applied to the rest of the transcripts (Bernard & Ryan, 2010). In this process, four more codes were developed for words, sentences, and/or paragraphs that emerged but did not fall into the predefined theoretical codes. Once the codes were tested, they were systematically applied to the rest of the transcripts.

During the coding process, another researcher, who is a third year doctoral student in an Educational Psychology program and is familiar with motivation research as well as qualitative research, independently coded a portion of the transcripts as a way to determine the reliability of the coding. This procedure was used to establish intercoder agreement (Creswell & Plano Clark, 2007) sometimes called intercoder reliability, which refers to "the extent to which content classification produces the same results when the same text is coded by *more than one* coder" (Webber, 1990, p. 17). After having coded some of the transcripts, we compared our coding to see whether we assigned the same codes or different ones to the text passages that we both had coded. The process of determining the coding reliability led to generating the other two codes (task interest and social interaction). Thus, there were 48 codes in total for the interview coding (See Appendix C). The percentage of similar codes should be computed before coding

(Webber, 1990). In this study, we reached 90% intercoder agreement (number of agreements over total number of agreements and disagreements), indicating an acceptable level of agreement (Klassen et al., 2008). Coding disagreement was resolved through discussion and 100% intercoder agreement was finally obtained. After reaching an acceptable level of agreement, I coded the rest of the transcripts. However, we continuously discussed coding issues through the remainder of the coding process.

To illuminate Thai students' experiences of procrastination, this study also examined interview data using within-case analysis and cross-case analysis as suggested by Patton (2002). That is, I first reviewed each participant's responses and identified words, statements, phrases, or paragraphs that were related to students' experiences of procrastination, reasons for procrastination, the role of motivation beliefs, and consequences of putting off academic tasks. Analysis of individual cases would help me understand the particular experiences of each student. Next, I started to compare and contrast patterns and/or themes across individual students in separate groups defined by low and high achievement to find commonalities and differences among students in each group and across groups. This approach corresponded with one of the purposes of this study, which attempted to understand Thai adolescents' procrastination across achievement groups.

Several strategies recommended by qualitative researchers (Creswell, 2003; Creswell & Plano Park, 2007; Lincoln & Guba, 1985) to establish validity or trustworthiness of findings were performed as follows:

Member checking. This technique involves asking participants to determine the accuracy of findings. At the end of the interviews, I developed summaries of students' experiences and asked them whether interpretations of their experiences were accurate. Evidence of trustworthiness was shown through participants' agreement with my interpretation (Teddlie & Tashakkori, 2009).

Negative case analysis. I used this technique to examine cases that did not support overall emerging patterns from the qualitative analysis, which might lead to modification of theories, hypotheses or frameworks.

Peer debriefing. This process involves discussing the qualitative study with a peer. In this study, I had a fellow graduate student examine my interview data and encouraged her to ask questions about my qualitative study. This technique can help "clarify interpretations and identify possible sources of bias" (Teddlie & Tashakkori, 2009, p. 295).

Reflexive journal. To account for trustworthiness of my qualitative data, I also kept a journal that consisted of information about decisions that I made throughout the study process (See Appendix D). For example, the journal entries might reflect decisions about methodology and biases that I may have made (Teddlie & Tashakkori, 2009). The information in the journal was written on a daily basis or as needed.

Integration of Mixed Methods Data

The complexity of some research topics can be effectively addressed using multiple research methods (Morgan, 1998) that result in different types of data. Thus, integrating the data derived from different methods is a key procedure in a

mixed method research design because it provides unique insight into the study that cannot be obtained through using one method alone (O'Cathain, Murphy, & Nicholl, 2007). Integration can be defined as "the point in the process of research procedures at which the investigator mixes or integrates the quantitative and qualitative data collection and analysis" (Creswell, Fetters, & Ivankova, 2004). Bryman (2007) suggested that in truly "integrated studies, the quantitative and the qualitative findings will be mutually informative. They will talk to each other, much like a conversation or debate, and the idea is then to construct a negotiated account of what they mean together" (p.21). In this study I integrated the findings from my two forms of research approach.

Despite the advantages of combining the data or findings from multiple approaches, this step is frequently not carried out in mixed methods studies. Bryman (2007) conducted 20 interviews with social scientists about their perspectives on mixed methods research and found several challenges in integrating different types of findings: (a) researchers emphasized one type of data for a particular audience; (b) researchers themselves preferred one approach over the other; (c) the research design did not allow for integration of the data; (d) one set of data appeared to be more interesting than the other set; and (e) researchers lacked skills and good exemplars of how to combine the two data sets.

Integration of the data can take place at multiple stages depending on research purposes and designs (Creswell & Plano Clark, 2007; O'Cathain et al., 2007). In this sequential explanatory design, integration took place in two stages: data analysis and interpretation. In the data analysis stage, quantitative results

from procrastination and motivation measures were used to develop the follow-up interviews as well as to identify individual participants with certain characteristics related to the study (Creswell, Plano Clark, Gutmann, & Hanson, 2003). As suggested by Creswell and Plano Clark (2007), results from the quantitative survey were carefully selected for follow-up qualitative investigation. Choices of this selection may include demographics, extreme cases, significant predictors in the quantitative phase, and surprising non-significant results (Creswell & Plano Clark, 2007). Specifically, typical cases from the procrastination measure and cases with different levels of academic achievement were of research interest in this study. Identified significant predictors of procrastination (e.g., self-efficacy and self-efficacy for self-regulated learning) in the quantitative study were followed up in the qualitative study as well.

In this sequential explanatory design, integration in the interpretation stage was done in such a way that the findings from quantitative and qualitative data, which are analyzed separately, are brought together in the discussion to understand how procrastination and motivation beliefs of adolescents operate in cultural contexts (Creswell et al., 2003; O'Cathain et al., 2007). Particularly, the quantitative and qualitative findings were explored to discover how these findings relate to each other for valid inference (O'Cathain et al., 2007).

CHAPTER FOUR: RESULTS

Study 1 (Quantitative Phase)

This study was conducted to examine the relationships among procrastination and motivation variables as well as the predictors of procrastination across Canada and Thailand. Therefore, the analysis was based on structural equation modeling (SEM) containing confirmatory factor analysis (CFA) and path analysis to test the measurement and structural models for adolescent procrastination and motivation variables. In other words, CFA tested the invariance of the factor structure and SEM tested the causal structure of the variables and examined the causal relationships among variables. SEM was conducted using the software package AMOS (Analysis of Moment Structure) 16.0 (Arbuckle, 2007).

Data Screening. Prior to conducting the main analysis of this study, SPSS 18.0 for Windows was used to examine the descriptive statistics and ensure the accuracy of data entry. Then, missing data were also examined and reported in Table 1.1 and Table 1.2. Missing data for Canadian and Thai samples for each scale, except Thai adolescents' GPA were less than 5% of data, demonstrating that this amount of missing data is acceptable and not a major problem (Farruggia et al., 2004). According to Hair et al. (2006), a variable that consists of missing data not exceeding 15% can be ignored; therefore, missing data patterns were not analyzed in this study. When missing data is only a minor problem, any method for handling missing data brings similar results (Tabachnick & Fidell, 2007). In this study, the mean replacement procedure was used for handling missing data.

In addition to missing data analysis, multivariate outliers were examined. Multivariate outliers refer to those participants who have extreme scores on more than one variable (Kline, 2005) and they can have an undue influence on the study results. This study used the Mahalanobis distance as the basic approach for the detection of multivariate outliers. Mahalanobis distance for each case is computed and compared with a critical value of the chi-square (χ^2) distribution (Kline, 2005). In this study, eight multivariate outliers (Mahalanobis distances exceeded the critical value—20.52, df = 5, $p < .0001$) were detected and removed from the subsequent analyses, leaving a final sample size of 312 for Canadian adolescents (313 minus 1) and 401 for Thai adolescents (408 minus 7). The detection of multivariate outliers contributes to the multivariate stability of results.

This study also examined the multivariate normality assumption by examining skewness and kurtosis of each variable as suggested by Hair et al. (2006) and Kline (2005). According to Hair et al., multivariate normality implies that "the individual variables are normal in a univariate sense and that their combinations are also normal" (p.80). Researchers can detect multivariate non-normality by examining univariate distributions (Hair et al., 2006; Kline, 2005). This method has been used in previous work (Klassen et al., 2008). Skewness and kurtosis values should not exceed 3 and 10, respectively. Otherwise, severe departure from univariate normality may be indicated. Table 2.1 and Table 2.2 show that skewness and kurtosis values for each variable for both Canadian and Thai samples were not larger than 3 and 10, indicating that the multivariate normality assumption is satisfied for these data.

The following sections present the results from single and multi-group CFAs that test for the factor structure invariance of procrastination and motivation variables across cultures. Then, the results from the test for the causal structure invariance are provided, followed by the findings showing the relationships among variables as well as the significant predictors of procrastination for Canadian and Thai adolescents.

Testing for the Measurement Model

This study used single-group and multi-group confirmatory CFAs to assess the factor structure invariance of procrastination and motivation scales across Canada and Thailand. Single CFAs were first run on each scale for each setting to investigate the factor loadings of the items on each scale for each cultural group. The results from the single CFAs also indicated the goodness-of-fit of the data for these groups. Once an acceptable range of fit indices were obtained, multi-group CFAs were conducted to test the factor structure invariance of the scales across groups (Byrne, 2009).

Results from CFA. The initial CFA results indicated that all items on academic self-efficacy, self-efficacy for self-regulated learning, and test-anxiety measures loaded adequately for both Canadian and Thai adolescents with acceptable reliability coefficients of .88, .86, and .83 for the Canadian sample and .82, .88, and .72 for the Thai sample.

In contrast, six items on procrastination and one item on self-esteem measures loaded adequately for Canadian adolescents but not for Thai adolescents (factor loadings < .30; Hsueh, Phillips, Cheng, & Fulton Picot, 2005) as described

in the following paragraphs. The reliability coefficients for the procrastination measure were .87 and .67 for the Canadian and Thai samples. The reliability coefficients for positive self-esteem and negative self-esteem were .83 and .84 for the Canadian sample and .72 and .66 for the Thai sample. The factor loadings for all items are presented in Table 3.

Table 3 shows that among the six items that did not load on procrastination scale, four items were positively worded (which were then reversed). Those were item 7 ("I put the necessary time into boring tasks like studying"), item 12 ("Whenever I make a plan of action, I follow it"), item 14 ("I finish important jobs with time to spare"), and item 16 ("I try not to put things off until tomorrow"). The other two items for procrastination were item 2 ("I postpone starting on things I don't like to do") and item 5 ("I keep putting off improving my work habits"). One possible explanation is that adolescents in Thai culture were similar to those in other East Asian cultures such as Japanese culture in responding to the positively worded items. Stein and his colleagues (2006) assessed the measurement invariance for the Sense of Coherence Scale in Chinese, Japanese, and Caucasian samples and found that two positively worded items did not load significantly for the Japanese group. The researchers, therefore, argued that there were culturally differences in response to such a scale and then dropped these two items from further analysis.

For self-esteem, item 8 ("I wish I could have more respect for myself") did not load adequately for Thai adolescents. This result was consistent with previous research testing the factor structure of self-esteem using the 10-item Rosenberg

Self-Esteem Scale in three ethnic groups (i.e., Farruggia et al., 2004). In their study, item 8 did not load adequately for both Chinese and Korean sample (λ = -11 and -.13, respectively). Previous research has suggested that this item has a low factor loading perhaps because of "cultural differences in the meaning of wishing" (Farruggia et al., 2004, p.722). When piloting this scale with some Thai students, some of them commented that this item could be interpreted either that they lack self-respect so they wanted to have it or that they already respected themselves but wanted to do more. This linguistic concern might explain why this item failed to load on the self-esteem scale for Thai adolescents.

The items that did not load for the procrastination and self-esteem scales were removed from further analysis in this study. The literature has also suggested that a modified scale should be tested with an independent sample before being used (Meyers et al., 2006). Thus, the revised versions of procrastination and self-esteem measures were tested with Thai participants randomly selected into two groups (N = 216 and N = 185). The revised scales were also tested with Canadian adolescents (N=312) and the combined Thai adolescents (N = 401) to assess whether they fit the data well for these groups.

Testing the revised 10-item procrastination scale. The fit indices for these models for the two Thai groups and the Canadian group were as follows: χ^2/df = 1.97, 1.59, and 3.49; CFI = .89, .90, and .89; RMSEA = .07, .06, and .09, respectively. Based on modification indices and previous research (i.e., Klassen et al., 2009), correlated error variances between two items with similar wordings (i.e., "I am a hopeless time waster" and I am a time waster and I can't seem to do

anything about it.") were added for both groups.

According to Byrne (2009), error correlations should be allowed to be different in different groups for the goodness-of-fit. The fit indices showed that the re-specified model substantially improved model fit for each group as follows: χ^2/df=1.45, 1.09, and 2.27; CFI=.95, .99, and .94; RMSEA=.05, .02, and .06 for the two Thai groups and the Canadian group, respectively. This model also fit the data for the combined Thai adolescents (N=401; χ^2/df=1.79; CFI=.95; RMSEA=.04). The χ^2 and the descriptive fit indices are presented in Table 4. The revised procrastination scale with 10 items fit the data well across these four groups with an acceptable range of fit statistics (i.e., χ^2/df < 3.0; CFI ≥ .90; RMSEA<.08) and was used as the final hypothesized model for the factor structure invariance across cultural groups. For further analysis, the combined group of Thai adolescents was used. Reliability coefficients for the revised scale were adequate for Canadian (α=.85) and Thai (α=.74) adolescents.

Testing the revised 9-item self-esteem scale. Because of the controversy about the numbers of factors for the Rosenberg Self-esteem scale in previous research (e.g., Hagborg 1993; Klassen et al., 2009; Rusticus et al., 2004), both one and two-factor models for self-esteem were tested. The results in Table 4 showed that the two-factor model (i.e., positive and negative self-esteem) fit the data significantly better than the one-factor model for both Canadian and Thai samples with significantly lower χ^2 and a more acceptable range of the fit indices. Therefore, the two-factor model was used for further analysis.

For this model, the results yielded a non-significant χ^2 = 49.39 (df = 26)

and 44.83 (df = 26) for the two independent Thai samples but not for the combined Thai adolescents (χ^2 (26) = 63.96). This might be due to the χ^2 limitation such that it can be affected by the large sample size. However, the other fit statistics (i.e., χ^2/df = 1.90, 1.72, and 2.46; CFI = .95, .95; and .96; RMSEA = .06, .06, and .06) were acceptable, demonstrating that the model fit the data well for these Thai groups. Because of the goodness-of-fit, post-hoc modifications were not conducted (Schreiber et al., 2006).

For the Canadian sample, a significant χ^2 was found. Due to the sensitivity of χ^2 to the sample size, the other fit indices were again consulted (i.e., χ^2/df = 3.63; CFI = .95; RMSEA = .09). Although CFI above .90 was obtained, the values of the relative χ^2 and RMSEA exceeded 3.0 and .08. According to the fit indices, the model did not fit the data well for Canadians. Thus, modification indices were examined and error correlation between item 2 ("At times, I think I am no good at all") and item 6 ("I certainly feel useless at times") was suggested. As can be seen, these two items were similar in meaning; consequently, error correlation between the two items was added into the model. The fit indices showed that the re-specified model, with error correlation added, substantially improved the model fit for this group as follows: χ^2/df = 2.27; CFI=.97; RMSEA= .06). Based on the fit statistics, the two-factor model for self-esteem reasonably represented the data for both Thai and Canadian adolescents. The reliability coefficients for the revised scale were also adequate for Canadian and Thai adolescents (α = .83 and .72 for positive self-esteem; α = .82 and .78 for negative self-esteem). Again, the combined group of Thai adolescents was used for further analysis.

CFAs on self-efficacy, self-efficacy for self-regulated learning, and test anxiety scales. As mentioned earlier, all items loaded adequately for these scales with adequate reliability coefficients for Canadian and Thai adolescents (α = .88 and .82 for self-efficacy; α = .86 and .88 for self-efficacy for self-regulated learning; and α = .83 and .72 for test anxiety). The results from single CFA analyses (see Table 4) showed that the original models for these scales fit the data poorly (χ^2/df > 3; RMSEA > .08). Thus, modification indices were examined and error correlations for items with similar and/or reversed wordings were added into the models (see Table 4 for free error terms and Appendix A for the items). The fit indices in Table 4 showed that the re-specified model substantially improved model fit for both cultural groups. That is, the chi-squares were statistically non-significant for self-efficacy and test anxiety for both groups. The descriptive fit indices were in a good range: χ^2/df < 3; CFI $\geq$ .95; RMSEA < .08) for the three variables for both groups. Based on such fit indices, the models for these variables fit the Canadian and Thai adolescent data reasonably well.

The separate CFAs were performed for procrastination and four motivation variables for each cultural group, with the results indicating that the modified models (i.e., adding error correlations) fit the data well for both groups. Then, multi-group CFAs were conducted to establish the multi-group baseline models for all variables prior to testing for the factor structure invariance across the two settings. The results from multi-group CFA are outlined in the following section.

Results from Multi-group CFA. Multi-group baseline models for

procrastination and the four motivation variables are shown in Table 4. The results showed that the procrastination and the four motivation scales fit the data across groups well with the model fit indices in an acceptable range (χ^2/df < 3; CFI > .95; and RMSEA < .08). After establishing the multi-group baseline model for each measure with the goodness-of-fit, the next step was to test the factor structure invariance of procrastination, self-esteem, self-efficacy, self-efficacy for self-regulated learning, and test anxiety across Canadian and Thai adolescent groups.

To indicate whether the factor structures for these scales were invariant across the two groups, the nested models in which factor loadings (model 2) and factor variance (model 3) were constrained to be equal across groups were compared against the unconstrained model (model 1) with no equality constraint imposed on it (Byrne, 2009). Chi-square difference tests ($\Delta\chi^2$) determined the invariance of factor structure across groups. The $\Delta\chi^2$ were obtained by subtracting the unconstrained model χ^2 and its degrees of freedom from the nested model χ^2 and its degree of freedom. A non-significant $\Delta\chi^2$ indicated the similarity of the factor loadings and/or the factor variance across groups (Meyers et al., 2006). Because of the sensitive statistical test of the chi-square, a more practical approach based on the differences between the CFI (ΔCFI) was also used to assess the invariance of the factor structure (Byrne, 2009; Cheung & Rensvold, 2002). The ΔCFI not exceeding .01 demonstrated the equivalence of the factor loadings and the factor variance of the variables across cultures (Cheung & Rensvold, 2002).

In testing the invariance of the factor structure of the scales, multi-group CFAs were run on each scale separately. The results from multi- group analyses in Table 4 and 5 showed a non-significant χ^2 (7) = 8.04, p = .33 for the unconstrained model for test anxiety only. In contrast, the results indicated statistically significant χ^2 for the unconstrained model for procrastination (χ^2 (68) = 137.93, $p < .001$), self-esteem (χ^2 (51) = 120.80, $p < .001$), self-efficacy for self-regulated learning (χ^2 (84) = 230.60, $p < .001$), and self-efficacy (χ^2 (9) = 21.66, p = .01). Since research has suggested that chi-square tests can be influenced by the large sample size, the descriptive fit indices were consulted (Farruggia et al., 2004, Stein et al., 2006; Yin & Fan, 2003), with the results in Table 4 and 5 demonstrating an acceptable range of the fit indices for all variables (χ^2/df < 3; CFI > .90; RMSEA < .08). The results, therefore, supported the proposed two-factor model for self-esteem and the proposed one-factor model for procrastination, self-efficacy for self-regulated learning, self-efficacy, and test anxiety across cultural groups.

Also, the invariance of the factor loadings was tested for procrastination and the four motivation variables. That is, the model with factor loadings constrained to be equal across groups (model 2) was compared to the unconstrained model (model 1) for all variables. For procrastination and test anxiety, the results shown in Table 5 yielded a non-significant $\Delta\chi^2$ of 7.89 (Δdf = 9) and $\Delta\chi^2$ of 1.27 (Δdf = 4). The ΔCFI did not exceed .01 for both variables. In terms of self-esteem, self-efficacy for self-regulated learning and self-efficacy, the ΔCFI was not higher than .01 as well. An acceptable range of fit indices was also

found (χ^2/df <3; CFI > .90; RMSEA < .08). Thus, the results indicated that the factor loadings for all variables were similar across groups.

Similarly, multi-group comparisons between model 1 and the next nested model with factor variance constrained to be invariant across groups (model 3) were done for all variables. The results showed that the $\Delta\chi^2$ of 16.30 (Δdf=10) for procrastination was not significant. Moreover, the ΔCFI for procrastination, self-efficacy for self-regulated learning, self-efficacy and test anxiety did not exceed the value of .01. The descriptive fit indices were also acceptable (χ^2/df <3; CFI > .90; RMSEA < .08). Thus, the results indicated the similarity of the factor variance across groups. In contrast, for self-esteem, the ΔCFI was higher than .01 (ΔCFI = .02). This showed that the factor variance for this variable was different across cultures. However, in the structural model testing, positive self-esteem was dropped from the model after the results from multi-group path analyses indicated that positive self-esteem did not significantly predict adolescents' procrastination in either Canadian and Thai adolescents. This process was described in more details in the next section. The results after positive self-esteem being removed from the structural model showed that the ΔCFI between the unconstrained model and the model with factor variance constrained to be equal did not exceed.01 (see Table 6). This indicated that the positive component of self-esteem was problematic to the model fit across cultures and that the factor variance for all variables was equivalent across cultures after positive self-esteem was dropped.

Single and multiple CFAs were then run on negative self-esteem. Error correlations based on modification indices and item-content similarities as well as

the mode fit indices for negative self-esteem are provided in Table 4 for free error terms and in Appendix A for the items. The results showed that the model for negative self-esteem fit the data well and its factor structure was equivalent across cultures (See Table 5). According to the results, the factor structure of procrastination, negative self-esteem, self-efficacy, self-efficacy for self-regulated learning, and test anxiety were invariant across groups. In other words, the interpretation of these latent constructs was the same between the groups.

After establishing the invariance of the factor structure of the adolescent procrastination and motivation scales, SEM was performed to test the structural model and to examine the predictors of adolescent procrastination in Canada and Thailand.

Testing for the structural invariance of procrastination and motivation variables across cultural groups

The hypothesized model of the causal structure for is illustrated in Figure 2. The multi-group baseline model for the combined variables was established before testing the structural model (Byrne, 2009). Consistent with previous research (i.e., Klassen et al., 2009), the model provided a moderate fit within an acceptable range of the model fit indices: $\chi^2/df = 1.84$; CFI = .88; RMSEA = .03. However, the CFI did not reach .90 as recommended. Therefore, alternative models were explored to see whether they were the best fitting models. Zimmerman and his colleagues (1992) have found that self-efficacy for self-regulation influenced self-efficacy, which in turn affected academic performance. Moreover, Jain & Dowson (2009) have found the predictive link from self-

efficacy to math anxiety. Based on previous research, two alternative models were tested: a) a mediation model in which self-regulatory efficacy influenced self-efficacy and then influenced procrastination and b) a mediation model in which self-regulatory efficacy influenced self-efficacy, which in turn influenced test anxiety and then affected task postponement. Supporting previous literature, self-regulatory efficacy was found to predict self-efficacy (β = .60 and .83 for Canadian and Thai adolescent respectively) and self-efficacy significantly predict test anxiety (β = -.44 and -.21 for Canada and Thai adolescents). However, the results yielded the poorer fit for the alternative models, compared to the original model ($\Delta\chi^2$ (4) = 65.79, $p < .001$ and $\Delta\chi^2$ (4) = 93.84, $p < .001$). Consequently, the hypothesized model in Figure 2 was used for testing the structural invariance across groups.

After establishing the multi-group baseline model, the invariance of the structural model was tested. In assessing for structural invariance, researchers are interested to see whether the path coefficients have the same magnitude for each particular group; therefore, they may choose to have only path coefficients constrained across groups. However, in this analysis, factor loadings, path coefficients, and factor variance and covariance for the combined variables were constrained to be equal across groups. That is, the unconstrained model was used to compare with the nested models in which equality was imposed on (a) the factor loadings, (b) the factor loadings and the path coefficients (i.e., the structural paths from the latent variables—self-esteem, self-efficacy for self-regulated learning, self-efficacy and test anxiety—to the criterion variable—

procrastination), and (c) the factor loadings, the path coefficients, and the factor variance and covariance.

The ΔCFI (< .01) shown in Table 6 revealed that the path coefficients were invariant across groups, indicating that the magnitude of the path coefficients predicting procrastination were not significantly different for Canadian and Thai adolescents. Moreover, the analysis yielded the same results found in the measurement model test: the factor loadings were similar for all variables across groups, whereas the factor variance and covariance were different across groups. As mentioned earlier, the results also showed the non-significant link between positive self-esteem and procrastination for both groups (p = .24 in each group), resulting in removing it from the model (e.g., GN, 2000; Rieckmann, Fuller, Saedi, & McCarty, 2010). Then, the multi-group baseline model was established for the modified model with positive self-esteem being removed. The model fit indices in Table 6 indicated that the modified model fit the data moderately across groups (χ^2/df = 1.88; CFI = .89; RMSEA = .035). The invariance of the structural model was again tested. As shown in Table 6, the ΔCFI for all models did not exceed .01, indicating that the factor loadings, the path coefficients, and the factor variance and covariance for the modified model were now invariant across groups.

Due to the equivalence of the factor structure and the causal structure of the combined variables across Canada and Thailand, this final hypothesized model in Figure 2 was used to examine the predictive relationships between motivation variables and procrastination for each cultural group, with a minor

difference: only negative component of self-esteem, along with other motivation variables were remained in the model. Prior to examining the predictors of adolescent procrastination across cultures, descriptive analysis was performed and the results were reported in the following section.

Correlational relationships of adolescent procrastination, motivation variables, and academic achievement across Canada and Thailand

Total means and standard deviations (SD) for procrastination and motivation variables are presented in Table 7.1 and item means and SD are provided in Table 7.2. The correlational results in Table 8 showed that motivation variables were significantly associated with procrastination in both cultural settings and the relationships among variables were similar across groups. As hypothesized, self-efficacy for self- regulated learning (r = -.60 and -.40 for Canadian and Thai adolescent, $p < .01$) and self-efficacy was negatively related to procrastination (r = -.27 and -.26 for Canadian and Thai adolescent, $p < .01$). In other words, adolescents with a strong belief in their capability to perform a specific task and to use self-regulatory strategies effectively were less likely to procrastinate than those who lacked self-efficacy and self-efficacy for self-regulated learning. Positive self-esteem was negatively related with procrastination behavior, whereas negative self-esteem positively associated with task delays for the Canadian and Thai samples (r = -.33 and -.30; r = .40 and .44, $p < .01$). The results also showed that both Canadian and Thai adolescents who had high test anxiety tended to procrastinate more than their counterparts with low test anxiety (r = .27 and .24, $p < .01$). Also, all motivation variables were related;

however, self-efficacy for self-regulated learning and test anxiety were weakly (but significantly) correlated with each other in the Canadian group (r = -.12, p < .05) but did not correlate significantly with each other in the Thai group (r = -.02, p >.05).

In terms of academic achievement, the correlational analysis in Table 8 demonstrated that GPA was negatively correlated with procrastination across Canada and Thailand (r = -.24, p < .01; r = -.13, p < .05). In other words, when procrastination increases, academic achievement decreases. GPA was also positively associated with self-efficacy, self-efficacy for self-regulated learning, and positive self-esteem, whereas it was negatively related to negative self-esteem in both countries. However, GPA was significantly related to test-anxiety in the Canadian group but not in the Thai group (r = -.04, p >.05). In order to test difference between high and low achieving students on procrastination, an independent sample t test was performed for each respective country. Based on a median split of GPA, Canadian and Thai adolescents were classified into high and low achieving groups. The results from the median spilt showed that in Thailand, GPA ranged from 3.01 – 4.00 for high achieving students and from 1.25 – 3.00 for low achieving students. In Canada, GPA ranged from 51.50 – 80.00 for high achieving students and from 81.00 – 95.00 for low achieving students. The analysis showed that in Canada, the average of procrastination scores (M = 22.40, SD = 5.25) was significantly higher for low achieving students than the average of scores (M = 20.22, SD = 5.65) for high achieving students, t(302) = 3.41, p < .05. Likewise, there was a significantly difference in procrastination scores between

high and low achieving students in Thai culture, $t(347) = 3.03$, $p < .05$. In particular, students with higher achievement had lower procrastination scores ($M = 21.31$, $SD = 4.91$) than their low achieving counterparts ($M = 22.84$, $SD = 4.50$)

Predictive relationships of adolescent procrastination and motivation variables across Canada and Thailand

Multi-group path analyses based on SEM were conducted to directly compare the contribution of self-esteem, self-efficacy for self-regulated learning, self-efficacy, and test anxiety to Canadian and Thai adolescents' procrastination. In SEM, the contribution of each motivation variable to procrastination was tested simultaneously. The path coefficients based on the model with all path constrained to be equal were presented in Table 9. The results from multi-group path analyses showed that the combined variables accounted for 61% and 59% of the variance in procrastination for Canadian and Thai adolescents. As expected, all motivation variables significantly predicted Canadian and Thai adolescent procrastination, with self-efficacy for self-regulated learning being the strongest predictor of procrastination for both groups ($\beta = -.89$ and $\beta = -.87$, $p < .001$ for Canadian and Thai adolescents, respectively). Negative self-esteem and test anxiety were also significantly associated with procrastination ($\beta = .31$ and .30 for Canadian and Thai adolescents' self-esteem; $\beta = .27$ for test anxiety in both groups). The regression weights for these paths partially supported the hypothesis that self-esteem and test anxiety were significant predictors for academic procrastination and they predicted procrastination in a similar fashion across cultures. This analysis, however, produced an unexpected result about the

predictive relationship: self-efficacy positively predicted procrastination for both groups, with $\beta = .54$, $p < .001$ for Canadian adolescents and $\beta = .53$, $p < .001$ for Thai adolescents. This result contradicted that of bivariate analysis showing the negative relationship between self-efficacy and procrastination.

The occurrence of obtaining contrasting valences is possibly due to the suppression effect (Kline, 2005) as defined such that "the estimated relation between a predictor and the criterion while controlling for other predictors is a surprise given the bivariate correlation between that predictor and the criterion" (Kline, 2005, p. 37). The suppression effect is not a rare phenomenon that occurs in the predictive analysis such as multiple regressions and structural equation modeling (Maassen & Bakker, 2001). The literature has suggested that there are at least two causal variables being involved in the suppression (Kline, 2005). In other words, the suppression effect can occur as a result of high correlations between variables.

As showed in Table 8, bivariate analysis yielded correlation coefficients of .52 for Canadian adolescents and .69 for Thai adolescents between self-efficacy and self-efficacy for self-regulated learning. Also, the results from SEM analysis with factor covariance constraints showed a correlation coefficient of .71 for Canadian and Thai adolescents. The results indicated a moderately strong association (Salkind, 2010). Moreover, self-efficacy for self-regulated learning was more highly associated with procrastination (r = -.60 and -.40 for Canadian and Thai samples) than was self-efficacy with procrastination (r = -.27 and -.26 for Canadian and Thai samples). The correlation coefficients of self-efficacy in

relation to procrastination may not be high enough to warrant the expected negative sign when predictive analysis is performed (Maassen & Bakker, 2001). In other words, while a high correlation was found between these two latent constructs, self-efficacy for self-regulated learning explained more variance of procrastination than did self-efficacy. According to the correlational and SEM results, the suppression effect occurring in this study may be due to high correlation between self-efficacy and self-efficacy for self-regulated learning.

Follow-up Analysis

To examine the suppression effect, a follow-up analysis was performed by testing two adjusted models with one model including only self-efficacy, negative self-esteem, and test anxiety and the other containing only self-efficacy for self-regulated learning, negative self-esteem, and test anxiety (see Figure 3).

Prior to testing the predictive relationships among these constructs, multi-group CFAs were run on these two models and the results indicated the good fit (i.e., $\chi^2/df < 3.0$; CFI >.90; RMSEA < .80). Moreover, the measurement and causal structure invariance for the two models were tested, with the results indicating that none of ΔCFI for the models exceeded .01. This means that the factor loadings, the regression paths, and the factor variance and covariance were equivalent across cultures for both models.

Then, multi-group path analyses in SEM were conducted to examine the predictive relationships between motivation variables and procrastination for each model. Table 10.1 showed that when excluding self-efficacy for self-regulated learning from the model, the relationship between self-efficacy and

procrastination was reversed. That is, self-efficacy was found to negatively predict procrastination as consistent with theory (and the bivariate correlation).

Additionally, Table 10.2 indicated that self-efficacy for self-regulated learning negatively predicted procrastination with the regression weights that were not much larger than bivariate correlation. Therefore, the results from the follow-up study have supported the argument that the positive relationship between self-efficacy and procrastination found in the proposed model was due to the suppression effect. Also, the results have provided empirical support for the predictive relationship between self-efficacy and procrastination in a negative direction, as suggested in motivation and procrastination literature (e.g., Klassen et al., 2008; Wolters, 2003).

When the suppression effect occurs due to the issue of high correlation between variables in a model, researchers are recommended to drop one of the two variables if they represent the same concept for parsimony (Maassen & Bakker, 2001). However, self-efficacy and self-efficacy for self-regulated learning are theoretically different as the former represents an individual's self-beliefs in their capability to perform academic tasks, whereas the latter refers to one' s self-belief in their capability to manage learning (Bandura, 1997). Thus, follow-up analysis also included running CFAs on only self-efficacy and self-efficacy for self-regulated learning scales to examine whether the scales measure different concepts. In this follow-up analysis, the model with self-efficacy and self-efficacy for self-regulated learning as separate (but correlated) factors was tested against a model with the variables combined.

The CFA results showed that when self-efficacy and self-efficacy for self-regulated learning were correlated, all the factor loadings significantly loaded onto their latent construct that they were supposed to measure. Moreover, for both Canadian and Thai samples, this model fit the data significantly better than the model with combined scales ($\Delta\chi^2$ (1) = 273.34, $p < .001$ for the Canadian sample and $\Delta\chi^2$ (1) = 87.42, $p < .001$ for the Thai sample). The results suggested that these scales are designed to measure different concepts of these motivational beliefs. Therefore, neither self-efficacy nor self-efficacy for self-regulated learning was dropped from the hypothesized model.

My results suggest that further research needs to be conducted in order to clarify the relationship between academic self-efficacy and procrastination in diverse populations. The next section of this study addresses these issues through the use of semi-structured interviews with Thai students, guided by the research question, "What do the students say about the role of self-efficacy on procrastination?" Through the individual interviews, students described their procrastination practices in relation to self-belief about their capabilities in performing academic tasks. Students also shared their experiences on delaying tasks which included antecedents and consequences of such practices. Moreover, this qualitative study attempted to understand academic motivation as well as procrastination in a culturally diverse context. The results from the qualitative phase are provided in the next section.

Study 2 (Qualitative Phase)

The main purposes for the qualitative phase were to provide complementary results to the quantitative study and to better understand Thai adolescents' procrastination. Additionally, procrastination and motivation patterns in low and high achieving students were also of the interest due to the relationships between procrastination and performance in the quantitative phase and in the procrastination literature (Elvers, Polzella, & Graetz, 2003; Steel et al., 2001; Tice & Baumeister, 1997).

To respond to the study purposes, a number of steps of participant selection were performed to select students who could provide adequate information on procrastination. Thus, students who reported having little experience with procrastination were excluded from this analysis. Additionally, very extreme cases were also excluded from the study as they might not be representative of the population. As a result, students whose scores on the procrastination measure were below the 15th percentile (16 and below) and higher than the 85^{th} percentile (28 and above) were excluded from the study. Then, students with scores in the range between 15^{th} and 85^{th} percentiles were randomly selected for the interviews as high and low achievers based on the median spilt that was conducted on GPA as an indicator of academic achievement in the quantitative phase. Students from high achieving and low achieving groups who had parental consent from both schools were randomly selected for the semi-structured interviews.

In attempting to reach data saturation with respect to available resources

(e.g. time), 14 Thai students from the total sample, eight students (four high achievers and four low achievers) from one school and 6 students (three high achievers and three low achievers) from the other school participated in the interviews. Moreover, when lived experiences of individuals are the target of investigation, at least five participants are suggested (Creswell, 1998). In this study, eight students were females and six students were males. Age ranges were 15 to 18 years (M = 16.43 years). Semi-structured individual interviews, ranging from approximately 20-45 minutes in length, were conducted in person at the schools and digitally recorded. Students were asked specific questions with probes (see Appendix B for a list of questions).

Participants' responses to the questions were analyzed based on procedures described in the methods section, resulting in six major themes: definition of procrastination, antecedents of procrastination, consequences of procrastination, overcoming procrastination, roles of motivation beliefs on procrastination, and roles of culture on motivation and procrastination practices. Under each major theme, sub-themes were provided along with representative quotes to give participants a voice and to support the themes or the interpretation of the data in this study (Holloway, 1997). Because adolescents from the low and high achievement groups were compared and contrasted to understand procrastination between these groups throughout the result sections, LA and HA were used to represent the low and high achievement group respectively.

Definition of Procrastination

The first theme that emerged from the individual interviews involved how

Thai adolescents defined procrastination. To ensure that these adolescents were familiar with this phenomenon and understood what it was, they were first asked whether they had knew or had heard of the word "procrastination". Of 14 participants, one participant said that he had not heard of this word before. (In Thai culture, procrastination is generally well known, and similar to western cultures, we say "Don't put off today by pledging tomorrow.") When the participant was given an explanation of how procrastinating behavior could be displayed, he admitted that "That's what I always do." The participant continued to say, "No one says or tells me anything about procrastination."

Nevertheless, the results showed that the majority of participants (13/14) in this study had known or heard about the word "procrastination". This indicates that the concept of procrastination exists in Thai culture and that these adolescents generally understood the concept. To understand whether or not procrastination in Thai culture means the same thing as in western cultures defined, the participants were asked to respond to the question, "What does procrastination mean to you?" The participants provided a variety of answers to the question; however, their responses demonstrated that regardless of their academic achievement, the participants commonly defined procrastination as "delaying tasks."

Consistent with Tuckman (2002), some individuals defined procrastination as delaying *necessary* tasks. For example, one participant said, "we put off the work that needs to be completed today until tomorrow because we think that it's not time to hand it in yet" Or procrastination means that "we keep putting off something that we need to do," a 17-year-old girl noted. The participants'

responses can be further categorized into two groups: procrastination in a general sense and procrastination in relation to academic domains.

From the interviews, procrastination was defined in a general sense by some of the participants (5/14). For example, one participant from the high achieving group stated that "suppose that we have to do something today but we wait to do it later because we think that we still have many days left to do it. It's like we keep putting it off." Another participant added that "you are not ready to do something and so you wait until the next time to do it." Also, a female adolescent in the low achieving group said that "Sometimes, I'm lazy so I put things off." In contrast, some participants (9/14) specifically spoke about procrastination in relation to their academic work. One participant noted that "procrastination means…like assignment submission. Suppose that the teacher told us to hand it in today but we asked the teacher if we could hand it in tomorrow or the following days." Or another participant said that "it is like submitting an assignment. When the teacher gave you a deadline, you thought you would submit it by then but you did not have the work to hand in. Then you kept saying that you would hand it in tomorrow but when tomorrow came, you did not hand it in still."

The participants' responses showed that the concept of procrastination in Thai culture is viewed similarly to the concept in western cultures. Generally, individuals are said to procrastinate when they delay tasks that they perceive need to be completed.

Antecedents of Procrastination

The next theme emerging from the interviews included how adolescents described their procrastinating behaviors: whether they regularly postponed tasks and whether there was a specific time that procrastination occurred. This theme also encompassed internal and external causes that were found to promote procrastination in adolescent populations.

The participants were asked whether or not they thought that they normally delayed completing tasks. All participants from both achievement groups reported having experience with procrastination to some degree. For the high achieving group, six participants mentioned that they s*ometimes* put off their tasks. Only one participant in this group said that he *regularly* postponed tasks. For the low achieving group, four participants reported that they *sometimes* procrastinated, whereas three participants reported that they *regularly* delayed tasks. The participants' responses are as follows:

> I put things off sometimes. I think that I study hard enough at school. My body feels tired and I want to take a rest…So, I have to put things off (HA).
>
> I put things off sometimes. When I have a lot of work to do, I won't be able to hand it in. But for whatever tasks that I can do, I'll do them first (HA).
>
> I sometimes [procrastinate]. I'll have to finish up some work before I can start doing the other work (LA).
>
> I think that I regularly put off my tasks because I mostly don't hand them in (LA).

Steel, Brothen, and Wambach (2001) have argued that individuals procrastinate because they cannot act on their work as they intend to. This

argument has been supported by six participants (three participants for each group achievement group): “Sometimes, I thought that I would study after I got home. But when I got home, I felt tired so I thought I would do it later. I keep putting it off” (HA) and “No, I don’t [intend to delay completing the work]. I just don’t do it when I’m supposed to” (LA). The interviews indicated that most adolescents in both achievement groups thought that they procrastinated occasionally. Moreover, the participants’ responses demonstrated that some adolescents expressed motivation to complete work but failed to take the necessary action.

Moreover, the participants were asked a general question about the time of procrastination, “When do you mostly procrastinate?” Their responses ranged from general to specific ones. For example, the participants mentioned that they procrastinated when there was too much work, on the weekends, or during school holidays. Clearly it is difficult to categorize these broad responses to understand patterns of time when adolescents mostly procrastinate. Additionally, some of the participants mentioned that they were unsure how to respond to such a question. To address these problems, a probe question—“When during your semester do you mostly procrastinate, for example, at the beginning, in the middle, or at the end?”—was used. This question not only became more specific to the participants but also helped to form a better understanding of when academic procrastination tends to occur and why it occurs at a particular time.

Data from the individual interviews revealed that procrastination occurred at a different time for different persons throughout a semester. The data also revealed that the time pattern was quite similar among adolescents with low and

high achievement. That is, three participants from each achievement group reported that they mostly procrastinated in the middle of the semester. Three participants and two participants from the low and high achievement group respectively reported that the beginning of the semester was the time that they mostly put off their academic tasks. Moreover, one low achiever and two high achievers said that they frequently delayed tasks at the end of the semester. Next, the locus (external and internal) of procrastination is explored.

External Causes

Workload. The amount of the work assigned to students to be completed in a specific period of time was stated as a main reason why Thai adolescents, especially those with high achievement, procrastinate in the middle and at the end of their semester. These high achieving adolescents (5/7) mentioned that that there was too much work around these periods resulting in them being tired and unable to complete their work. That explains why some of their work had to be put off. Some of the participants stated:

> It should be around the middle of the semester because I'll have lots of work to do during this period. I have to study as well as to do my homework. So, I might postpone my work.
>
> For me, it should be around the end of the semester because lots of work will be assigned when we approach the final exams. So I might not be able to get them done.
>
> It should be the end of the term because there is more work around that time. That makes me feel tired.

Whereas workload seemed to be an important feature that caused procrastination in high achieving adolescents, only one participant from the low achievement group stressed her procrastination resulting from a heavy workload:

“ Lots of work so I do not have time…Because I don’t have time, I put off some work.”

Task Characteristics. This study was also interested in the nature of tasks, which were most likely to be delayed by Thai adolescents. The interviews revealed that task characteristics determined how Thai adolescents would approach their academic tasks. According to these adolescents, there were many kinds of academic tasks that they avoided, which included writing assignments, mathematics assignments, science projects, worksheets, artwork, and studying for exams. A difference between high and low achievement adolescents was noticed in that group work was delayed by adolescents with high achievement (2/7) but not by the other group: “I have to memorize the formulas and say them out loud in front of the teacher. I want to do it but sometimes we have to do it as a group and my friends are not ready.” Some adolescents also mentioned delaying non-academic tasks such as housework. Thus, individuals may procrastinate on different things and across domains.

Based on Steel’ meta-analysis (2007), timing of rewards and punishments and task aversiveness are two environmental factors for procrastination. In this study, deadlines were also found to be another factor that makes adolescents decide whether or not they will delay completing their tasks. Whereas “the amount of work” was a salient cause of procrastination for high achieving adolescents, most of the adolescents from the low achievement group (5/7) procrastinated at the beginning and in the middle of their semester because they viewed that most of their tasks were due at the end of the semester. Thus, some of

them thought that they had a plenty of time to complete their tasks. There were only two participants with high achievement who agreed with this reason. The participants' responses included: "I mostly put things off at the beginning of the semester because most of our assignments are due at end of the semester. So I think that I will be able to hand them in on time" (LA) and "I mostly put things off at the beginning because I think that I have lots of time to do my work" (HA).

Moreover, deadlines influenced procrastinating behavior in that tasks that needed to be handed in first would get started immediately but those that can be submitted later on would be postponed: "The assignment that is due first will get done first. The assignment that is due later will get done later. Things will get done in order" (LA). Deadlines that were perceived as imminent led to task postponement as the participant stated: "When the teacher asks me to write a report and to hand it in on the same day, and if I feel like I can't get it done, I'll ask the teacher to postpone it" (HA).

Task aversiveness refers to "actions that one finds unpleasant" (Steel, 2007, p. 68) and is likely to influence task postponement. From the interviews, adolescents (4 from HA and 1 from LA) noted that they were likely to put off tasks that they dislike: "I put off work that requires a lot of thinking and analyzing, such as mathematics…because it's difficult for me to understand the contents. I have to memorize formulas that I do not get. I don't like that subject" (HA). A low achieving girl mentioned "What kinds of work do I mostly put off? It's artwork because I don't like arts…frankly, sometimes if I have to draw or sketch a picture, one of my close friends will do it for me."

From the response, one possible reason why adolescents become uninterested in or dislike their tasks is because of a lack of understanding of the task itself or in the content. Other adolescents (3 from each group) also mentioned task difficulty as a cause of procrastination. In particular, they were more likely to postpone their assignments when they viewed their assignments as too difficult to complete or when they feel that they did not comprehend the subjects or tasks as they commented, "I put off my work because sometimes, I don't know how to do it. When I get home, I ask people to help me out with my work but nobody knows how to do it" (HA) and "I don't understand my work so I have to put it off" (LA).

The value of tasks is a considerable cause of procrastination. Two participants reported that they tended to postpone tasks that they viewed as less valued: "I'll complete the important task first and I'll get done the work that I think it is less important later. For example Mathematics, I'll start working on it earlier than other unimportant tasks" (LA). The importance of work may be defined according to marks or grades attached to it as a 16-year-old male stated, "This assignment is worth 20 points. That is a lot, right? So, I have to do it right away, somewhat like that" (HA).

Teacher characteristics. Four participants (2 from each group) spoke of the influence that teachers had on their procrastination behavior. Particularly, they tended to complete their work right away if the teachers were firm and tried to push them to work:

> If the teachers are strict, students will work harder and hurry up to hand in the work…But if there is a deadline and the teachers do not push us to have the work submitted….Some of us keep postponing it even when the deadline is long passed. We end up submitting our work just before the

final exams (LA).

Interestingly enough, one of the participants mentioned teachers' teaching quality as a cause of his procrastination: "Some teachers teach well, while some don't. If they teach well, I will pay attention to what they teach. But if they don't teach well, I don't want to study and will postpone my work for those classes" (HA). He further commented that, "Some classes go fast…I can't catch up because I'm not an expert but the teachers are. The teachers can go fast but I can't because I'm just a learner."

Internal Causes

The interview data revealed that in addition to external factors, procrastination can also result from participants' feeling or moods about performing academic tasks.

Fatigue and b*oredom.* Two participants addressed their fatigue resulting from the huge amount of work: "…I don't know what to say. Sometimes I'm tired. There are a lot of classes, right? I'm tired" (LA) and "…I think that I study hard enough at school and feel so tired so I want to rest…" (HA). Besides the participants' fatigue relative to workload, boredom is another internal factor that came up as a cause of procrastination according to a low achieving student "Sometimes, it depends on my mood. I don't feel like working. I'm bored of the subjects that I don't understand." As have been found earlier, a lack of understanding can make individual become indifferent in their tasks, leading them to avoid such tasks eventually. This points out how important it is for students to acquire knowledge and skills that need to complete their work or to develop a

basic understanding of the subjects or tasks that will help them successfully complete their work. This way, the chance of procrastination might be reduced. Moreover, according to the self-regulated learning perspective, monitoring one's own comprehension on subject matters is therefore a key strategy for successful learning (Garcia & Pintrich, 1994).

Individual preferences. For both achievement groups, individual preferences over leisure activities are likely to be an internal condition for procrastination. The adolescents (3 from each group) mentioned that they delayed their academic tasks in a favor of other activities, particularly at the beginning and in the middle of the semester. Such activities included hanging around with friends, playing games, talking on the phone, using the internet, seeing movies, and joining extra activities offered through their schools. The following are the participants' responses: "It should be around the beginning of the term that I mostly procrastinate because I rather hang out with friends than work" (LA) and "Sometimes, I hang out with friends. I have so much fun being with them. I'm relaxed" (HA).

Outcomes of Procrastination

Delay can be viewed either as functional or dysfunctional phenomenon,with procrastination being one form of this dysfunctional delay. According to the participants from both achievement groups, procrastination, for the most part, is likely to be described as maladaptive behavior that has negative impacts on their student life. For most of the participants, procrastination negatively influenced their performance, grades, and moods. However, a few

participants categorized as high achievers stressed some positive side of procrastination on their academic outcomes.

Impact of procrastination on performance. Most of the participants from both groups (12 out of 14 participants) mentioned poor quality of work and getting low grades as negative outcomes of procrastination. An 11th grader stated, "I didn't get marks for it. My assignment didn't turn out well when I put it off and quickly completed it the day before the deadline" (HA). A 17-year-old girl added that, "Sometimes, I did not understand my assignment so I put it off. When I did that, my work was not well done. Also, I did not have time to read more about it because I had to do the important assignment first and that left me no time to do the other assignments" (LA).

Another student also supported the idea that some assignments took up their time resulting in them getting other tasks done quickly and poorly as she said, "I spent a lot of time on a big project and did not have time to do some tiny work, like exercises, so I had to do it quickly in class. My handwriting may be poor and my work may be not 100% completed. So the teachers took off some points" (HA). Moreover, a male participant found himself performing poorly on math exams as a result of his procrastination, "I wondered why my scores and my grades in Math were low. I knew that it was because I didn't study hard for it. I didn't read and I didn't do it because I procrastinated. I thought I would study on Saturday, but I put it off until Sunday, and then Monday. I kept delaying my study until the exam dates. Actually, I didn't read my books even when the exams came. So, my scores came out low" (HA). The participants' responses were consistent

with the quantitative results showing that procrastination was negatively related to academic achievement.

Although the majority of participants described procrastination in a harmful pattern, two participants from the high achievement group addressed a positive side of task postponement in relation to their good performance, in spite of reduction of their marks: “My score was reduced [because] I submitted my work late. But my work came out good most of the time.” The other one added, “Yes, my work was well done mostly because I had more time to think about the work when I delayed it. So, my work improved.”

Impact of procrastination on emotions. In addition to the participants’ poor performance, procrastination resulted in negative emotions in most of the participants (12 out of 14 participants). Increased stress was a common symptom of procrastination for both low and high achieving adolescents. Other emotions such regret or guilt were also express by both achievement groups.

According to the majority of participants (4 from LA and 5 from HA), procrastination causes stress. They reported that stress as a result of procrastination occurred for many reasons. Stress occurred because they had to deal with increased workload that resulted from task delay (2 for each groups): “Yes, I was stressed. There were a lot of assignments that I needed to get done. I didn’t do them right away when the teachers assigned me work. I just completed them all at once” (LA) and “I’m stressed sometimes because new tasks are assigned every day. It’s like work keep piling up and I have to rush to get it all done” (HA). Moreover, some participants expressed their stress or worry

concerning their academic outcomes: “Sometimes, I was stressed during the time that I was working because I was afraid that my work wasn’t well done” (LA), and “I’m worried if I’ll pass my courses because my scores might be too low” (HA).

High achieving adolescents (2/7) compared themselves to their peers while expressing feelings of stress, regret, remorse and guilt resulting from procrastination: “Yes, I’m stressed. Sometimes I put off my work until I missed the deadline. Then, I asked myself why I didn’t get the work done first. I asked myself why my friends did it, but I didn’t do it?” Another girl added her comment such that, “I felt so nervous and stressed that I didn’t want to go to school. It’s like my friends did their work, but I didn’t.” These feelings were also found in some low achievers (2/7): “Because my work was not completely done when I put it off. I wish that I did not delay it,” and “I was upset because my teachers kept asking me for my work, but I didn’t have it.”

An 18 year-old girl from LA group, moreover, described her anxiety as a result of procrastination: “I am anxious. For example…It keeps getting into your mind that you haven’t done your work…But if you have done it, you will feel relaxed. It’s like you get something off your own chest. Then, you feel good.” She continued to express her discouragement: “We keep postponing our studying…Because we don’t have much time left, we start to feel discouraged. Then we will think that we certainly cannot pass the entrance exam because we cannot complete our reading in time.”

Overcoming Procrastination

Even though procrastination was perceived to result in generally negative outcomes, 10 of the adolescents (6 from LA and 4 from HA) in this study were confident that they could overcome or at least lower their procrastinating behavior. Among four adolescents who seemed to lack confidence to combat their procrastination, the reasons behind their lack of confidence were varied. From the high achievement group, one participant mentioned that procrastination occurs as a result of his fatigue: "I'm not quite confident about overcoming procrastination. On some occasions, if I feel too tired after school, I'll put off my work and get a rest instead. If I'm not tired, I want to complete my work…" Additionally, two other participants noted that procrastination seemed to keep happening and that they were unsure how to deal with it.

The adolescents from both groups, nevertheless, provided suggestions for overcoming procrastination. Most adolescents (5 from each groups) referred to intrinsic motivation and self-regulatory strategies that included becoming self-motivated, scheduling, organizing, and managing time in accordance with previous research in college students (e.g., Klassen et al., 2008). Some of the participants' comments include: "We should be able to manage our time…We have to finish homework before we go to play games or something like that" (LA) and "I must be able control myself. I will have to control myself, like managing my time, in order to become more organized" (HA).

The Role of Motivation on Procrastination

This section will address how motivation beliefs, particularly self-efficacy

and self-efficacy for self-regulated learning have an influence on procrastination practices in a cultural context. Equally important, the section provides complementary and integrative findings to those from the first phase when adolescents' motivation beliefs and procrastination were quantitatively measured. In the first phase of the study, the data revealed that all motivation beliefs—self-efficacy, self-efficacy for self-regulated learning, anxiety, and self-esteem—significantly predicted procrastination in both Canadian and Thai adolescents. However, the direct relationship between self-efficacy and procrastination cannot be simply interpreted as a result of the suppression effect (a positive sign between self-efficacy and procrastination was obtained in SEM analysis in contrast to a negative sign obtained from bivariate analysis) and thus, needs to be reexamined so that the relationship between these two constructs is clearly understood.

The individual follow-up interviews with Thai adolescents focused on the role of self-efficacy on procrastination practices— How does self-efficacy influence adolescents' procrastinating behavior? Along with that, self-efficacy for self-regulated learning in relation to procrastination was further explored as it strongly predicted procrastination in the SEM model and self-regulatory strategies based on the student interviews also appeared to be a factor in combating procrastination.

The Role of Self-Efficacy on Thai Adolescent Procrastination

After antecedents and outcomes of procrastination were explored, the participants described how their confidence in performing academic tasks (i.e., self-efficacy) influenced how much they procrastinated. According to Bandura

(1997), self-efficacy as a belief that one's agentive capabilities can influence effort, courses of action, perseverance in the face of obstacles and failures, and thus plays an important role in how an individual's tasks and goals are approached. Bandura's argument holds true for Thai adolescents.

The interview data revealed that self-efficacy had an influence on procrastination for the majority of participants (12/14), regardless of their achievement level. Among these participants, 11 of them mentioned negative association between procrastination and self-efficacy. However, the other two participants believed that self-efficacy did not matter to their procrastinating behavior.

The majority of the participants (11/14) mentioned that they were likely to immediately approach their academic tasks and procrastinate less when they felt confident in doing such tasks:

> If I am confident that I can do it [an assigned task], I will get started on it right away. But when I don't feel confident to do it, I will wait to search for the information from the internet or might ask my friends (LA).

> Yes, if I feel that I can do the artwork, I would love to do a good job at it. I love to make it exceptionally better than others. So, I start working on it right away (HA).

With a strong sense of self-efficacy, individuals are more likely to view difficult tasks as challenges that they would rather master than avoid. In this study, six participants who reported that self-efficacy was associated with task postponement spoke of difficult tasks as things that they seemed to put off and easy tasks as things that they would likely get done early:

> I'll put off the subjects that I find difficult and choose to do the easier ones first (LA).

> If the task looks difficult, I'll lose my interest in doing it…For example, Physics, I don't understand why I have to take it because even though I do, I still don't get it anyway…so I hardly study for it. It's different compared to my Biology class…the contents are not too hard for me to deal with. So, I do my work and pay attention in that class (HA).

Fear of failure was also brought up in relation to low self-efficacy for two 10th graders from both achievement groups, which in turn determined how tasks would be approached: "I'm afraid to start working on the subjects that I'm not confident in because I am afraid that I will do them wrong" (HA) and "When I don't think that I can do it [an assignment], I'll ask my friend how to do it. I'll try to complete the assignments that I don't think I can do it first because I'm not sure if I will get them right or wrong" (LA). The former statement implies that low levels of self-efficacy was related to more procrastination, whereas the latter response indicates that low level of self-efficacy was correlated with less procrastination, perhaps due to the influence of the fear of making mistakes. Such positive relationship between self-efficacy and procrastination was also found in previous research. Klassen et al. (2008) found that for a few of their participants with learning disabilities, high levels of self-efficacy related to high levels of procrastination due to the misinterpretation of the difficulty level and time required for the task.

The influence of self-efficacy on human functioning through affective processes emerged in both achievement groups. The adolescents (6 from LA and 3 from HA) reported that they experienced anxiety about performing specific tasks or exams when they lacked confidence in their capability to achieve them or when they perceived their tasks to be difficult. In turn, the participants postponed such

tasks or exams relative to their anxiety: “When I feel anxious about doing a task, I will postpone it. I plan to look at my friends’ work because I am not confident to do it by myself” (HA); “I’m anxious about my own work because I’m afraid that I may not be able to do it as well as my friends who are smart…I will wait to see how my friends’ work turns out before completing my work” (LA); “I’ve been anxious about the task that I think I can’t do. Sometimes, I did it, but it was wrong. If I don’t want to do it because I can’t do it, I’ll leave it until a later time” (LA).

Some of the participants (4 from LA and 1 from HA) also related their sense of self-worth or self-esteem to their anxiety, leading to task delays: “For example, Mathematics. I’m not good at that. Although if I think hard about how to do it, I still can’t do it” (LA) and “I’m not good at English. Sometimes I feel that I don’t want to study it, but I have to. I keep putting off such tasks” (HA). Only one participant in grade 12th mentioned that the more she became anxious about taking her exam, the harder she studied for it.

Although the majority of the participants pointed out the crucial role of academic self-efficacy on procrastination practices, confidence in completing tasks was sometimes viewed as less important to procrastination. One girl mentioned that her confidence in performing tasks would affect her procrastination practices more or less depending on whether or not she liked those subjects: “Sometimes, it affects me a lot; sometimes it doesn’t. It depends on the subjects. If I like the subject, I’ll do it right away. For example, I like Arts, so I’ll get it done right away.” The response indicated that task interest is a driving force

for this adolescent to want to attempt tasks. In a similar fashion, two female 12th graders believed that their intention to work had more influence on their procrastinating behavior than their sense of self-efficacy. One of the girls commented, "If I believe that I will get the work done, I will get it done. So, it [confidence to complete a task) doesn't affect how I do my work because my intention is to finish it up" (LA). The other one added, "If the teacher gives me work, I will try to do it immediately" (HA). In fact, intentions, according to expectancy-value theory, are also a determinant of behavior. Intentions are influenced by attitudes toward the behavior measured in the form of "expected behavioral outcomes" and "the value placed on those outcomes" and by norms measured in the form of "expectations of how other people are likely to react to the behavior and by one's motivation to comply with their likes and dislikes" (Bandura, 1997, p. 284).

Based on the majority of Thai adolescents in this study, self-efficacy or beliefs about one's capability to perform a particular task was related to procrastination. That is, when the participants felt confident to complete their assigned tasks, they were more likely to approach their tasks immediately. Moreover, with low levels of self-efficacy, the participants were more likely to avoid completing the assigned tasks when they found that the tasks were difficult to accomplish. These qualitative results were consistent with those obtained from the correlational analysis in the quantitative phase which found a significantly negative link between procrastination and self-efficacy ($r = -.26$, $p < .01$).

The majority of participants (5 for each group) believed that they could control their own learning, with most of their responses pointing out capability to plan or manage time as a key factor: "I organize my time, for example, when to study, when to read, and when to take extra lessons out of school. I have my own schedule to plan what I have to do" (HA) and "Yes, I am confident that I can control my own learning because I have set my own schedule so that I know what I have to do and when I have to do it" (LA). High achieving students who did not believe in their capability to regulate their own learning focused on managing their effort: "I am not quite confident because I think that I must work harder than I normally do" and "I think it is hard for me to do so…I will not study if I am bored." For low achieving students, assistance from others was mentioned as a way to help them in controlling their own learning: "No, I'm not confident. I need my parents' help because teenagers like me still want to goof around" and "My teachers and my friends need to help me. For example, my teachers have to warn me about the deadline of an assignment. For my friends, they have to do the assignment immediately and so I will do it the same way as they do."

Consistent with the findings from the quantitative phase, the majority of participants (11 in total; 5 from LA and 6 from HA), believed that self-regulatory efficacy related to procrastination. The participants' self-regulatory efficacy, more particularly their confidence in the effective time management (2 from LA and 4 from HA) was mentioned. That is, when the participants felt confident that they

could manage time effectively, they were more likely to get things done quickly as they planned: “When I’m confident that I manage my time well, I feel that I can follow my plan or schedule and my homework will not be delayed” (HA). In contrast, lack of confidence in time management could result in procrastination: “I made mistakes in allocating time for my work. I think that I can leave my work until tomorrow and can get it done on time. But when tomorrow comes, I can’t get it done” (HA).

The Thai adolescent interviews revealed the crucial roles of motivation beliefs in procrastination: the adolescents were likely to procrastinate less when they believed in their capability to perform tasks and to use self-regulatory strategies, particularly time/effort management skills.

The Role of Cultural Beliefs on Academic Motivation and Procrastination

The Introduction highlighted the important role of culture on people’s beliefs, values, and motivational profiles. According to Hofstede (1991), Thailand has a low individualism ranking, and high power distance compared to western countries. According to the majority of participants (13/14), their family placed a great emphasis on education as the key to career and future success of children: “Education is a big deal...Everyone has to get an education because it is good for our future. If we have knowledge, we will be successful”; “Education builds our future because if we do not have education, we will end up getting a poor job. So, my mom told me to continue my studies so that I can get a good job”; “They [parents] view education as the most important thing. My parents are not highly educated so they want me to get a university education”; and “They [parents]

think that education is important because after I graduate, I will have a good career and good future. But If I have a poor education, like having only a high school diploma, I might not be able to get a good job."

Vondras (2005) has suggested that "students' personal orientation of individualism or collectivism may influence social cognitions and behaviors that support academic achievement" (p. 4). In support of Vondras' notion, the interview data revealed achievement motivation reflected Thai students' responsibility to the needs of significant others emphasized in collectivist or group-oriented cultures such as Thai culture. The majority of the participants (12/14) shared the same idea that they wanted to academically achieve not only for their own success but also for their family: "I want to do well in school so that I can get a job, make money and then have a stable and wealthy family. Then, I want to take care of my parents because they have worked very hard" and "My parents are getting old and will not be able to work. So they might get less income. If I have a good job, I can take care of them. I also can give part of my income to my siblings." Additionally, the focus on a sense of group belonging and group harmony was pointed out as achievement by two 12th graders: "Getting to study what I like is not necessarily the best. But I have to manage to get through it and be able to work harmoniously with others. We must be accepted by the group" and "Academic achievement means that I can take care of myself and my family and live happily in society."

The participants' responses indicated that Thai families have placed a great value on education and achievement and have a cultural belief in effort, hard

work, and persistence. These cultural values, in return, seem to influence the families' view about working behaviors of young family members. According to the participants, their families encouraged them to work hard and at the same time had negative views and responses to procrastinating behavior (14/14). Their responses included:

> He [father] always complains when I procrastinate. He said that I should always want to do better. I should not think that what I am doing is the best that I can do. I have to try harder. It is not easy to become a successful person…nobody can succeed without trying hard.

> My mom teaches me or warns me when she notices that I put off things too often, for example when I do not read, when I do not pay attention to my schoolwork. She says that procrastination is not good at all. It makes us end up having lots of work uncompleted and that will affect my own study.

Therefore, it may be concluded that procrastination is viewed as an inappropriate behavior in Thai culture since maladaptive patterns of procrastination may come into conflict with beliefs about the relative importance of hard work and achievement. Interestingly, some children were uncertain about their parents' views of procrastination since the parents did not discuss this topic with them. However, the results from the current study revealed that academic procrastination is common among Thai adolescents and that it is significantly related to academic motivation.

CHAPTER FIVE: DISCUSSION

This cross-cultural study investigated adolescent procrastination using quantitative and qualitative methods. Study 1 explored the correlational relationships between motivation beliefs, academic achievement and procrastination as well as identified motivation variables as significant predictors of procrastination among high school students in Canada and Thailand. Study 2 provided additional information to explain more clearly the relationships among variables of interest as well as increase understanding of adolescent procrastination in Thai culture. This section thus begins with discussion of quantitative and qualitative findings, followed by integration of both findings.

Quantitative Discussion

The current study clearly demonstrated the importance of academic motivation to adolescent procrastination, with a similar pattern of procrastination being shown across cultures. According to the findings, all related motivation variables—self-efficacy for self-regulated learning, academic self-efficacy, negative self-esteem, and test anxiety—had significant unique influences on procrastination. Specifically, both Canadian and Thai adolescents who felt confident to control or manage their own studying were less likely to adopt such task delays. Likewise, the correlational findings suggested that adolescents were less likely to procrastinate when they had high levels of self-efficacy. The findings thus supported the hypothesis about the relationships between procrastination and self-efficacy beliefs. In contrast, adolescents in Canada and Thailand who developed high negative self-esteem and who experienced high anxiety in

evaluation situations were more prone to procrastination. Note that the beta weights for self-esteem were almost identical ($\beta = .31$ and $\beta = .30$ for Canadian and Thai adolescents, respectively), and those for text anxiety were identical across cultures ($\beta = .27$ for both groups). The findings as suggested by the literature thus confirmed the relationships of these predictive variables to procrastination but failed to support the hypothesis that self-esteem would be a stronger predictor of procrastination in Canadian adolescents, whereas test anxiety would strongly predict procrastination in Thai adolescents. Moreover, the current findings provided empirical support for the link between procrastination and academic achievement across the two cultural settings.

The current study thus suggested that procrastination patterns were similar among adolescents from Canada and Thailand. The findings were consistent with results from previous research investigating adult procrastination in different countries—Australia, Peru, Spain, United Kingdom, United States, and Venezuela (Ferrari, O'Callaghan, & Newbegin, 2005; Ferrari, Diaz-Morales, O'Callaghan, Diaz, & Argumedo, 2007). These findings also suggested that rather than cross-cultural differences, the tendency to postpone tasks is common across cultures. Therefore, both adolescent and adult procrastination research indicate universality of procrastination patterns across many cultures.

With regard to the importance of motivation, self-efficacy for self-regulated learning was the strongest predictor of procrastination in both countries. Consistent with the findings from the current study, self-regulatory efficacy played a crucial role in male and female adolescents from Singapore and Turkey

such that adolescents with high self-regulatory efficacy tended not to procrastinate when being compared to adolescents with low self-regulatory efficacy (Klassen & Cetinkale, 2009; Klassen et al., 2009). Taken together, the findings from cross-cultural studies vividly indicate that regardless of cultural learning contexts, self-regulatory efficacy beliefs are beneficial to student learning because they promote academic achievement (Caprara et al., 2008; Zimmerman et al., 1992) and can help prevent maladaptive procrastination.

Bandura (1997) articulates, "If people believe that they have no power to produce results, they will not attempt to make things happen" (p. 3). In the case of self-efficacy for self-regulated learning, it may be said that if students believe that they can adopt effective self-regulatory strategies to promote learning, they may tend to use such strategies more frequently and successfully, and procrastinate less. Consequently, the current findings suggest that self-efficacy for self-regulated learning acts as a preventive against dysfunctional procrastination by enhancing students' intrinsic motivation as well as the use of self-regulatory strategies. This pattern appear to be the same for students in both individualist and collectivist cultures because a belief about personal capacity to have control over individual actions is a basic mechanism for human of all cultures (Bandura, 1997).

Self-efficacy for self-regulated learning influenced levels of academic self-efficacy in both cultural groups according to the SEM alternative models. Adolescents who were confident to regulate their own learning appeared to be confident to perform academic tasks. An explanation for this relationship is that

adolescents with high self-efficacy for self-regulated learning maintain their effort while performing tasks. With sustained effort, adolescents have the opportunity to develop academic proficiency (Bandura, 1997). The finding thus extends previous studies demonstrating the effect of self-efficacy on academic motivation and achievement across subject domains and educational levels (e.g., Pajares, 2003; Pintrich & De Groot, 1990; Wolters & Pintrich, 1998) by showing the importance of self-efficacy for self-regulated learning in predicting academic efficacy beliefs and procrastination across cultures.

Contrary to expectations, test anxiety did not more strongly predict procrastination in Thai adolescents than in Canadian adolescents. Atkinson's theory of motivation may provide an explanation for this phenomenon. The theory has suggested that individuals' need for achievement must be taken into account to explain avoidance or approach tendencies. If the motive to achieve success is stronger than fear of failure relative to evaluation situations, individuals likely approach their task at hand (Zeidner, 1998). Therefore, test anxiety may not predict procrastination differently across cultures because the need for achievement is emphasized in both individualist and collectivist societies even though reasons for achievement may vary across cultures (e.g., Bempechat & Dragon-Severson, 1999; Church & Lonner, 1998; Salili, 1994, & Komarraju et al., 2007). However, the current findings seem to give support for the general conclusion that test anxiety is rather a universal construct across cultures (Bodas & Ollendick, 2005; Seipp & Schewarzer, 1996).

Again contrary to expectations, self-esteem was found to similarly predict

procrastination in Canada and Thailand. The findings may be explained in two ways. From a cultural perspective, Thai society has developed unique cultural values which may be somewhat divergent from collectivist countries such as Japan and Hong Kong. Concerning individual goals to be achieved during their lifetime, Thai students ranked success in life, family happiness, and self-esteem among the top three objectives in their lives (Komin, 1978). In a related study by Shawyun & Tanchaisak (2005), self-esteem was an important value for Thai students. Moreover, levels of self-esteem in Thai nursing students were comparable to those from western cultures such as the UK (Siriphan et al., 2002). Thus, when it comes to motivation and achievement, Thai students may place a great emphasis on a sense of self-worth as a key to success as do adolescents from an individualist culture.

Second, adolescent development may influence the current findings. Changing from concrete thinking to abstract thinking, adolescents are able to think about themselves and their futures. When adolescents' expectations cannot be met, their self-esteem may decline (Trezesniewski & Robins, 2005). Levels of self-esteem can also depend on the quality of relations with parents and peers (Lian & Yusooff, 2009). Adolescents in all cultures seem to be vulnerable to decreasing self-esteem through the teen years and thus may likely procrastinate to protect their self-esteem from being damaged. Perhaps the effects of self-esteem on procrastination might be dissimilar across cultures when different age groups are involved, but this needs to be empirically tested.

The similarities of motivation across cultures found in the current study

have been supported by previous research. Chiu and Xihua (2008) studied family and motivation effects such as self-efficacy, self-concept, intrinsic motivation (i.e., interest in math) on mathematics achievement in 41 countries, including Hong Kong, Thailand, the United States and the United Kingdom. They have concluded that the relationship of family functioning to motivation was different across cultures, but the relationship between motivation and achievement was similar. Klassen et al. (2009) also found a similar pattern of procrastination across Canada and Singapore and thus argued, "The I/C framework may be a useful starting point from which to understand cultural differences, but it may be less relevant when exploring academic motivation" (p. 808). Similarly, the current study empirically showed that across Canada and Thailand, self-efficacy for self-regulation is more important than self-esteem and test anxiety to predict procrastination. Regardless of cultural dimensions, adolescents need to develop a sense of confidence, particularly in regulating their learning. This will help them proactively participate in school tasks by successfully using proper strategies to tackle new tasks, experience positive emotions related to the task demands, and effectively manage learning resources such as effort and time, consequently reducing the chances of procrastination.

In addition to highlighting the important role of motivation in procrastination, this study showed a link between procrastination and GPA across cultural contexts. That is, regardless of individual or collectivist cultures, when procrastinating behavior increases, academic achievement likely decreases. Moreover, the quantitative results demonstrated that there was a significant

difference in procrastination between high and low achieving students such that those with higher achievement rated their procrastination lower than their counterparts. This trend was found in both Canada and Thailand. The findings were consistent with a great number of research demonstrating a negative correlation between procrastination and academic achievement of the students (e.g., Beswick, Rothblum, & Mann, 1988; Kennedy & Tuckman, 2010; Klassen, Krawchuk, & Rajani, 2007; Rothblum, Solomon, & Murakami, 1986; Tice & Baumeister, 1997; Tuckman, 2002). The results altogether point to a dysfunctional role of procrastination in students' achievement that should be taken into account in assisting students to achieve academically. Dembo and Eaton (2000) place an emphasis on the issue of procrastination in adolescents' learning and achievement as they posit, "time management and dealing with procrastination are critical self-regulatory skills that have important implications for determining both academic and nonacademic outcomes.

Qualitative Discussion

The qualitative phase provided an understanding of procrastination in adolescents with different levels of achievement in a non-western culture, with the qualitative results demonstrating the similarities rather than differences of procrastination between low and high achieving adolescents. The qualitative findings also supported the quantitative results pertaining to the similarities of procrastination across cultures. Note that the number of participants in this study was small (N = 14); therefore, generalization of the results to the larger sample should be done with caution.

The qualitative findings demonstrated that procrastination can occur across domains such as math assignments, writing assignments, and exams and occur throughout the semester in Thai culture as consistent with procrastination patterns in western cultures. The qualitative findings also revealed that the salient cause for task delays in adolescents with high achievement was significant amount of assigned work. For the majority of low achieving adolescents, the crucial factor influencing their procrastination was deadlines: the adolescents perceived the deadlines still far off and thus they thought that they had plenty of time to complete their work. Task aversiveness as a cause of procrastination seemed to be an important factor for procrastination in both achievement groups.

In general, high achieving students likely adopt adaptive learning patterns (Schunk & Zimmerman, 1994; Vazile-Tamsen & Jennifer, 1999; Zimmerman & Martinez Pons, 1986). In this study, procrastination patterns in Thai students, especially those with high achievement did not represent their desire to avoid or delay completing academic work. These students delayed completing such tasks particularly when they could not manage academic demands. Procrastination can result in an increased workload; however, this study pointed out the inverse relationship between excessive workload and task delays. Along the same line Conner, Pope, and Galloway (2009) investigated the causes of school-related stress in high-performing high school students in California. They found that students with high grades believed that “schoolwork dominates their day” (p. 54) and consequently, excessive workload led them to develop academic stress. Moreover, workload was found to negatively predict examination grades as well

as positively predict surface approach to learning which, in turn, influenced achievement (Diseth, 2007). Similarly, Tuckman (2002) posited that academic procrastinators may be more successful in a less structured environment than in a highly structured environment, for example, a web-based course where a great number of required performances with the deadlines are required.

Whereas most high achieving students reported their procrastination to be due to excessive workload, the majority of Thai low achieving students reported deadlines as a cause of procrastination. Consistent with the current study, Wikman (2001) explored adult procrastination by interviewing individuals who define themselves as chronic procrastinators. He found that deadlines contributed to successful completion of tasks in two ways: "For some people, the closer the proximity to the deadline…, the more successful they were in meeting expectations for completion. For others, the closer the proximity of the deadline, the more difficult it became to get on task" (p. 83). Moreover, deadlines contribute to motivation such that they enabled individual to increase focus and attention on specific tasks or goals in a way that they could not do before the deadline imposed. Wikman also found that their participants reported experiencing a striking lack of time management and organizational skills. Some of them were not even aware that these strategies were available, beneficial, and necessary.

Tice and Baumeister (1997) have suggested that when individuals lack intrinsic motivation, they will need external forces to perform well and "after all, a deadline is an important form of extrinsic motivation, and in the relative absence

of intrinsic motivation, a deadline may be the main or a sole motivator" (p. 455). This study did not deeply explore types of motivation (i.e., intrinsic versus extrinsic motivation) that Thai students had towards their learning. However, the qualitative findings may imply that learning and motivation patterns of Thai low-achieving students are the same as those found in literature. For example, Lau and Chan (2001) investigated motivational characteristics of Hong Kong under-achievers, low achievers, and high achievers. They found that under-achievers and low achievers had low value and interest in learning. Also, these groups reported less use of rehearsal, time management, and effort management than those with high achievement. The authors thus suggested that "a lack of effective learning strategies was the main reason for poor achievement, regardless of the students' intellectual ability" (p. 424). Consequently, Thai low achievers seemed to rely on deadlines as the main motivator to get started on their tasks. It should be noted that these students ended up not performing well under the deadline pressure as similarly found in Tice and Baumeister's work. Thus, performing well under time pressure or time constraints may not be the case for these students. Another explanation may be that low achieving students may lack skills in self-regulatory strategies such as planning and organizing, more specifically time management to help them successfully complete tasks in a timely fashion.

Another important cause of procrastination lies with task aversiveness. High achieving students chose to complete manageable tasks and/or interesting tasks over those that they found too difficult to get done or that they found less interesting. Likewise, more than half of low achieving adolescents developed task

postponement because of these environmental factors. Steel's Temporal Motivation Theory (TMT; 2007) posits that values that individuals hold toward a task determine how they approach it. Particularly, individuals are unlikely to delay tasks they view as pleasant. When they view unpleasant tasks as having low value, they tend to delay them. Thus, the findings from the current study not only showed that task characteristics are considerable causes of procrastination in adolescents from diverse cultural settings but also indicated the reliability of TMT theory to explain the occurrence of procrastination across cultures.

However, task aversiveness is not only related to feelings of unpleasantness. Previous research has suggested a multidimensional construct of task aversiveness. For example, Milgram, Marshevsky, and Sadeh (1995) included difficulty and boredom as components of the aversiveness, which related to task postponement. In extending previous work, Blunt and Pychyl (2000) investigated task aversiveness across stages of personal projects: inception, planning, action, and termination. They found that in addition to pleasure and enjoyment, task aversiveness was associated with other project dimensions. Over the course of the project, task aversiveness was related to negative aspects of project appraisal including boredom, frustration, and resentment. In particular, it can be expected that procrastination occurs with "individuals engaged in boring projects," "when frustrating projects have to compete with distracting or alternative activities which offer relief from frustration," and "when individuals resent having to engage in their activities" (p. 161). Lack of autonomy was another underlying dimension of task aversiveness in the stage of inception,

action, and termination. Blunt and Pychyl's study thus demonstrated that whether or not individuals perceive a task or project as aversive depends on many factors that play different roles at different stages of task completion. The current study did not deeply explore task aversiveness as a cause of procrastination and that may explain why such factors did not emerge from the interviews. Future research interviewing adolescents based on Blunt and Pychyl's project analytic perspective may be useful in understanding the role of these factors in task aversivess related to procrastination in diverse cultural settings.

Along the same line, Pekrun, Goetz, Daniels, Stupnisky, and Perry (2010) argue that boredom is considered an achievement emotion influenced by learning activities and is harmful to motivation, behavior, and performance. Pekrun and his colleagues conducted five studies incorporating a variety of methodologies: qualitative, quantitative, cross-sectional, and predictive, to investigate state and trait achievement boredom in undergraduate levels in Germany and Canada. They found that boredom was negatively related to perceived lack of control over achievement activities and lack of valuation of such activities. Moreover, boredom negatively correlated with intrinsic motivation, study effort, the use of self-regulation, and academic performance, whereas it was positively related to attention problems. Due to its relation to working behavior and motivation, boredom might be a considerable factor that can explain adolescent procrastination in future research.

In general, the qualitative findings demonstrated that adolescents seemed to exhibit dysfunctional procrastination as shown through negative impacts on

academic performance (i.e., poor quality of work), achievement (i.e., low performance), and emotions (e.g., stress, anxiety, and guilt). However, only students in the high achievement group mentioned "good performance" as a positive consequence of procrastination. The interview findings showed that, in general, procrastination was detrimental to success and psychological well-being of students even in a non-western culture. However, it is important to note that procrastination is not always associated with low achievement (Pychyl, Morin, & Salmon, 2000). In terms of stress, the findings were consistent with research in adult populations (e.g., Tice & Baummeister, 1997) demonstrating that procrastinators experienced low levels of stress early in the semester but their stress increased towards the deadlines. Thus, for procrastinators, "the early benefits are outweighed by the later costs" (Tice & Baummeister, 1997, p. 457). As a result of task delays, most Thai adolescents had experienced stress because procrastinating brought about an increasing amount of work for them to complete. In addition to stress, some high and low achievers experienced other emotions such as a feeling of regret or guilt when they procrastinated. According to Fee and Tangney (2000), a feeling of guilt, also known as a moral emotion, is not surprisingly a consequence of procrastination. Such a feeling is frequently accompanied by a feeling of remorse and regret as shown through the qualitative findings— "Because my work was not completely done when I put it off. I felt sorry that I delayed it." Moreover, procrastinating individuals often wish they could undo the action (Fee & Tangney, 2000).

Meanwhile, procrastination appeared functional in some high achievers.

Functional procrastination is defined as "…behavior evoked for actions that have a low probability of needing completion or have excessively high costs associated with personal completion at their optimal time" (Ferrari et al., 1995 p. 12). In this study, procrastination was considered helpful for some high achieving students because it can result in positive consequences—good performance. According to the participants, students had more time to think about their work when they delayed completing it, and consequently work could be well done. Thus, procrastinating sometimes can be beneficial to some individuals and under particular situations (Birner, 1993).

The current study also presents a clear picture of the importance of self-beliefs in one's capacity to perform academic tasks and to manage learning across cultures as shown through the quantitative findings. With a strong sense of self-efficacy, the Thai adolescents, regardless of low or high achievement, feel that they can successfully engage in a designated task, which in turn promotes a possibility that an action will be taken to complete such task. Bandura (2002) argues that "the common human nature is at the level of basic capacities and the specialized mechanisms through which they operate, but cultures shape these potentialities into diverse forms" (p.273). Regardless of culture, people value personal efficacy as a motivation for success but self-efficacy may operate in different ways.

Beliefs in capacity to regulate learning influenced whether or not Thai adolescents would procrastinate. For this particular group, metacognitive-related components seem to be more related to procrastinating behavior than cognitive-

related components such as cognitive learning strategies. Students were less likely to delay work when they felt confident that they could either manage their time or effort to have the work completed. Therefore, the qualitative findings clearly supported the results from the first phase that motivation self-beliefs seem to be key components to adolescent procrastination not only in western settings but also in Thailand, with its different cultural values and beliefs reflected in education, motivation, and achievement.

In terms of Thai cultural beliefs, the qualitative findings showed that Thai adolescents were greatly influenced by interpersonal relationships, especially with their family and extended family. The qualitative findings also showed that cultural beliefs of Thai society play a part in achievement and academic motivation of its youth. First, similar to the view of many individualist and collectivist cultures, education is considered very important for its members as a door to future success (Teowkul et al., 2009).

Thai students showed a willingness to meet their parents' achievement goals. Interestingly, there is a trade-off between trying to live up to parents' expectations. That is, attempting to highly achieve helps to increase students' motivation but at the same time facilitates stress and anxiety, particularly for high achieving students. Thus, this study may suggest that although high achieving students display a desired adaptive pattern of learning, they may be more prone to experience such negative emotions as a result of family or social pressure than others. The influence of parents on high achieving students' emotional consequences was also found outside collectivist societies as previous research

showed that Canadian students in academically rigorous settings tended to develop more "distressing emotional and/or punitive consequences for not achieving their parents' academic expectation" (Trudeau, 2009, p. 114).

Cultural beliefs of collectivism play a crucial role in students' academic motivation and need of achievement as well. Previous research (Salili, 1994) has suggested that the motives of achievement for many Asian students concern the image and the status of the family. In other words, children need to perform well for the purpose of saving face for their family. However, the current study showed that the motives of academic success of Thai students reflected more of their responsibility to the needs of family. The family is considered a foundation of Thai society and people are closely tied with their family (Teowkul et al, 2009). Komin (1991) studied values and behavior patterns of Thai people and found that grateful relationship orientation is highly emphasized in the Thai society. Gratefulness or *Katanyuu* in Thai is considered a good trait of Thai people. Thus, it is not surprising that the need to take care of family is a salient theme that emerges as academic motivation among Thai students. The group-oriented emphasis of a collectivist society such as Thailand also influenced the point of view about academic achievement. For some students, being successful means that they have to be accepted by others in the group and live happily with them. This is indeed consistent with a 15-year National Education Plan (2002-2016) in Thailand, emphasizing that "Thai people shall attain full development in terms of physical and spiritual health, intellect, morality and integrity as well as a desirable way of life that focuses on living in harmony with other people" (Office of the

Education Council, 2004, p.18)

This study also investigated how cultural beliefs in Thai culture play a role in adolescent procrastination. Unfortunately, participants provided only modest information as this issue was not frequently discussed in the family. However, the findings showed that procrastination is not a learning pattern that Thai parents desire for their children. Reasonably, procrastination reflects a lack of effort and low motivation of individuals towards their learning and that contradicts with the strong beliefs of Thai parents about what is needed for achievement. There is empirical evidence showing the influences of cultural beliefs on procrastinating. Rosário et al. (2009) have suggested that procrastination tended to decrease in children with parents who valued education and their children's studies and learning as "they try to inculcate this working ethics in their children" (p. 122). Moreover, Dietz et al. (2007) have found that individuals in cultures that value learning, effort, and hard work were less likely to adopt procrastinating behavior.

Integrating Quantitative and Qualitative Results

Taken together, the quantitative and qualitative findings revealed that adolescent procrastination was generally similar across Canada and Thailand. Although the second phase of the current study explored procrastination in Thai students only, its findings lend support to the quantitative data. That is, the qualitative findings through discussions with Thai students showed that procrastination was related to confidence in regulating or managing learning, with metacognition such as managing time and/or effort emphasized. It implies that when quantitative analysis gives answers to the "what" type of research questions,

qualitative analysis can provide insights into the “how” and “why” types of questions (Klassen et al., 2008). In this case, the quantitative data pointed out that self-regulatory efficacy plays a crucial role in adolescent procrastination, whereas the qualitative data spoke of the dimensions of self-regulation that are important for adolescent procrastination.

The qualitative data provided information to clarify the unclear relationship between academic self-efficacy and procrastination from the first phase. The qualitative data from the Thai sample suggested that self-efficacy is negatively related to procrastination. Most adolescents described that they were more likely to delay an academic task when they were unsure of their ability to successfully complete it partly due to fear of failure. Those with low self-efficacy tended to find tasks difficult and were more likely to choose to complete the easy tasks over the tough ones. Low academic self-efficacy seems to arouse student anxiety (Bandura, 1994, 1997). Particularly, when students weaken their sense of efficacy in a particular subject, they become anxious about the corresponding academic demands (Mills, Parajes, & Herron, 2006). Consequently, some adolescents ended up dealing with their anxiety by putting off those anxiety-related tasks. The interview data, therefore, supported both the final hypothesized models showing direct links from the predictors to procrastination and one of the SEM alternative models in which academic self-efficacy influenced test anxiety and then predicted procrastination.

Comparing the qualitative findings to the body of procrastination literature may explain why the same relationships were found between motivation variables

and procrastination across Canada and Thailand. Consistent with definitions given in literature (e.g., Burka & Yuen, 1983; Tuckman, 2002), Thai adolescents viewed procrastination as the behavior of delaying necessary tasks which can result in negative consequences such as poor academic performance and negative health problems—stress, anxiety and a sense of guilty or regret. The effect of procrastination on students' academic performance has been confirmed in past research such as Akinsola, Tella, and Tella (2007) and Tice and Baummeister (1997). Tice and Baummeister found that undergraduate procrastinators experienced low levels of stress early in the semester but their stress increased towards the deadlines. In my study a few high achieving students revealed positive aspect of procrastination behavior in terms of good performance.

The quantitative results in the current study confirmed previous results that procrastination was related to low academic achievement for adolescents in the particular cultures under investigation. The results from the first phase, moreover, suggested that adolescents with low achievement tended to procrastinate more than those with higher achievement. The qualitative findings provided an explanation of this relationship in that adolescents seemed to produce poor work when they completed work under the time pressure in attempting to meet the deadlines, which in turn affected their low grades. Consistently, Van Eerde (2000) posits that the major effect of procrastination on task performance is increasing time pressure and inadequate time to work on the postponed goals, resulting in negative outcome such as "a trade-off between the speed and the quality of the performance" (p. 382). The results from both phases altogether

indicated that procrastination potentially harms academic achievement.

While both quantitative and qualitative studies found the link between procrastination and achievement and differences in procrastination scores between low and high achieving adolescents, procrastination patterns emerging from the interviews with low and high achieving adolescents were rather similar. For example, students in both achievement groups delayed completing academic tasks because of both external (e.g., workload, deadlines, and task aversiveness) and internal (e.g., boredom and individual preferences) conditions, although excessive workload was mentioned in most high achieving students and deadlines were noted in most low achieving students. Moreover, lack of confidence in doing academic activities as well as regulating learning seemed to influence procrastinating behavior in both achievement groups. Procrastinating behavior had an impact on task performance and affects for all students; indeed, these themes were the most common antecedents and consequences of procrastination as shown in previous research (e.g., Steel, 2007; Van Eerde, 2000). Future research may replicate this qualitative study with a larger sample size to validate the conclusions on procrastination of diverse achievement groups.

In summary, text and numeric data enhance the interpretation of the role of motivation on procrastination in two cultures. Furthermore, combining quantitative and qualitative results helps develop a greater understanding of adolescent procrastination. That is, both types of data indicate that adolescent procrastination functions similarly across cultures.

Conclusion

From a self-regulated learning perspective, procrastination is a failure of self-regulation such that students who report more use of self-regulation are less likely to procrastinate (Tuckman, 2002). In contrast, those who are disorganized and used fewer cognitive and metacognitive learning strategies are prone to procrastination (Howell & Watson, 2007). The current study showed that procrastination was not just a result of a simple deficit in self-regulation strategies (Solomon & Rothblum, 1994). In fact, motivational facets of self-regulation also play a central role in adolescent procrastination. For Canadian and Thai adolescents, procrastination tends to be lower in adolescents who believe in their capability to control or manage learning. More particularly, when students were confident about organizing their learning and/or managing time or effort well, they were less likely to procrastinate. This finding points out the importance of motivational beliefs concerning metacognitive components of self-regulation in dealing with dysfunctional procrastination among Thai students. Therefore, the study may support the notion that self-regulation requires both *will* and *skill* to facilitate students' learning and achievement (Garcia, 1995). Along the same line, when academic self-efficacy increases, procrastination seems to decrease. Thus, motivational beliefs with regard to capability to successful complete tasks cannot be neglected. Consistent with social cognitive theory, motivation beliefs are the most important key to reduce procrastination.

The qualitative phase in this study provides insights into procrastination phenomenon in adolescents in Thai culture. The majority of high achieving

students mentioned heavy workload as a cause of procrastination, whereas the majority of low achieving students noted deadlines as a reason for them to procrastinate. Furthermore, most students mentioned dysfunctional procrastination as it resulted in negative consequences such as poor performance and stress, whereas a few high achieving students indicated procrastination in a positive manner. Clearly, students from both groups experienced procrastination and its consequences to some degree; therefore, academic excellence did not stop students from procrastinating.

The qualitative data also highlights the importance of the cultural context which considerably influences student motivation and achievement. Based on the interviews, education for Thai society is very important and as such, boys and girls seem to be equally encouraged to receive high education. The study, therefore, suggests that individual achievement is important for students in collectivist cultures because it provides the opportunity to achieve the group/family goals. Attempting to meet those achievement goals or parents' expectations increased students' motivation but at the same time, students, especially with high performance, suffered from stress or anxiety in working towards such goals. This may be because this particular group of students may be easily affected by fear of failure (Trudeau, 2009). Furthermore, culture influenced beliefs about effort versus ability: beliefs in effort or hard work contribute to a negative view of Thai parents towards adolescent procrastination.

In the current study, combining the quantitative and qualitative data increases knowledge and an understanding of procrastination in school-aged

populations in diverse cultural settings. Procrastination is a common phenomenon across cultures, with its effect being detrimental to most if not all students. The findings from the study provide implications for theory, future research, as well as educational practices.

Theoretical Implications

Knowledge gained from this study may have some theoretical implications and contribute to motivation and procrastination literature. First, procrastination has been well documented in adult populations, especially in undergraduate students. However, different levels of education may require different approach to learning. Thus, the study contributes to motivation and procrastination research by exploring this phenomenon in adolescent populations in order to identify significant motivational factors that do or do not influence procrastination in school-aged groups. The study did not simply replicate previous studies by examining the relations of motivation variables to procrastination but employed a cross-cultural framework to understand how these variables interact in cultural contexts. The study has demonstrated that adaptive motivation patterns—high self-regulatory efficacy, high academic self-efficacy, high self-esteem, and low anxiety in encountering tasks or evaluation situations—are necessary for adolescents of individualist and collectivist cultures to counter dysfunctional procrastination. This confirmed the similar patterns of motivation and procrastination mentioned in Klassen et al. (2009); however, the current study has further pointed out that adolescents' academic self-efficacy may be more important for academic achievement (Zimmerman et al., 1992) but less important

for procrastination than self-regulatory efficacy. These relationships should be reassessed for a valid conclusion.

Second, the study contributes to motivation and procrastination literature by illustrating how valuable a mixed-methods approach can be in exploring procrastination. In the current study, the quantitative phase sheds light on the unique influences that each motivation variable has on procrastination, whereas the qualitative phase clarifies how such motivation constructs related to procrastination. For example, the SEM model revealed that self-efficacy for self-regulated learning strongly predicted procrastination, but the interview data extended those results by indicating that students' confidence in the use of metacognitive strategies such as managing time and effort were more relevant to procrastinating than the use of cognitive strategies for this particular group. Giving *voice* to the participants in turn led to valuable information that may extend knowledge to the field of motivation and procrastination as described below.

This study extends the procrastination research to a different cultural setting, providing valuable information about adolescent procrastination in Thai culture in which procrastination has never been investigated in such a systematic way. In particular, the study has investigated procrastination patterns in high and low achieving students beyond comparing levels of procrastination across cultural groups. The study showed that heavy workload, deadlines, and task aversiveness seemed to be the crucial factors that feed procrastination in adolescents. This information thus provides suggestion for researchers in designing interventions

and testing their effects across achievement groups.

Moreover, the study increases an understanding of the role of culture on student academic motivation and procrastination. The study has showed that assumptions about the views of education and/or achievement should not be made when the family and learning contexts are divergent because such family and school contexts as institutions of a culture are determined by its cultural values (Oettingen & Zosuls, 2006). The study supports the notion that overgeneralizations of results from one culture cannot be made for all other cultures. Klassen (2004) found that an assumption about "cultural characteristics based on generalizations about national cultural orientations" exists in most studies (p. 227). He further continued that it is important not to assume that people with different national backgrounds share a common characteristic. Understanding human universals and variability may help researchers deal with the issue of overgeneralizations found in the literature.

In this study, some Thai adolescents described that their parents did not talk much about procrastination. The findings thus may suggest the need to increase an awareness of procrastination in some settings. Researchers may pay more attention to procrastination research in different cultural contexts and disseminate their findings to spread knowledge about the effects of procrastination on adolescent achievement. Krawchuck (2009) recommended, "Procrastination needs to be seen as a valid and research-worthy psychological construct. Although procrastination may not have as grave consequences as some other psychological phenomena, it is a construct that warrants further attention"

(p. 54).

Educational and Practical Implications

Previous research and the findings from this study articulate that procrastination is damaging behavior that can prevent students from performing their best and causes unnecessary stress and anxiety. Therefore, helping adolescents to reduce or overcome procrastination is one of the best ways to increase the chance of accomplishment for students. Students will benefit from planning "when, where, and how one intends to initiate an action that one is prone to put off" (Weiber & Gollwitzer, 2010). However, the integrated findings from the current study suggest that training competencies in self-regulation skills may not be adequate because without confidence in using them. Pajares and Schunk (2002) supported this notion by commenting, "Students who lack confidence in skills they possess are less likely to engage in tasks in which those skills are required, and they will more quickly give up in the face of difficulty" (p. 18). Thus, teachers need to help adolescents to develop a sense of confidence in directing their own learning so that adolescents can get started on academic tasks and stick to them even when there are distractions.

Teachers can help adolescents to strengthen their self-efficacy to engage in self-regulation by ensuring that adolescents experience success in applying their knowledge and skills to a variety of challenging tasks (Bandura, 1997). Pajares (2006) also recommends several ways to enhance student self-efficacy. Such strategies include providing frequent feedback, and modeling self-regulatory practices. Moreover, teachers should measure adolescents' efficacy beliefs in their

self-regulatory strategies and help students adjust their inaccurate judgment of such beliefs. Equally important, "teachers should make students' self-efficacy beliefs and self-regulatory strategies a focus of professional practices, for they are important components of motivation and of academic achievement" (p.121).

In the light of self-regulatory efficacy, the cross-cultural findings from this study are beneficial to educators who are teaching in a classroom with diverse cultural backgrounds and academic achievement. The significant results of the relationships between procrastination and self-regulatory efficacy across Canada and Thailand suggest that most students, regardless of their backgrounds and previous achievement, need to have high self-regulatory efficacy to effectively approach tasks. This, however, leaves a challenge for teachers in how to help these students to increase their self-efficacy for self-regulated learning. The findings from Klassen (2004) showed that the sources of self-efficacy were given different weights by different ethnic groups. Consequently, teachers need to pay attention to individual students and work with their strengths to see which strategies are the best for them in promoting their confidence in learning strategy use.

The qualitative study also provides insight into how school can assist adolescents in not delaying academic work and enhance their academic engagement. Thai high achieving adolescents remarked that they had to delay some academic tasks when they did not have enough time to complete all the work assigned. Ramsden (1992) mentioned that exclusively focusing on content leads to significant workload for students. In return, students may not be able to

process such amounts of work in a meaningful manner with the amount of time that they have. Therefore, teachers should realize the effect of excessive workload on the quality of students' learning. Students may benefit more from work that allows them to take a deep approach towards their learning. If the aim of education is for student to learn well and deeply engage in learning, teachers must ensure that the curriculum allows students to do so (Chambers, 1992).

Second, teachers should address motivation because it can influence students' learning. The interview data suggest that some low achieving students relied on deadlines as primary motivation for task completion, showing low intrinsic motivation. There are several ways recommended to enhance intrinsic motivation. Self-determination theory (SDT; Ryan & Deci, 2000) focuses on supportive environments for a sense of competence through positive feedback, autonomy through choices, and relatedness through a feeling of group belongingness. When these needs are satisfied, self-motivation is increased which leads to effort, persistence, and quality performance. Individuals who are not motivated or extrinsically motivated by external contingencies will do tasks at the last minute because they feel pressured to do so, whereas those who are intrinsically motivated by the pleasure derived from task completion will complete tasks in a more timely fashion even when tasks are unpleasant (Senecal, Koestner, & Vallerand, 1995). Thus, promoting intrinsic reasons for doing tasks may help adolescents reduce procrastination due to task aversiveness as described in the study.

The qualitative study demonstrates that students' perceptions of education

and achievement were shaped by cultural values and beliefs in that society. In a culture where academic achievement is highly valued and academic expectations are high, students with high performance seem to be at more risk of developing psychological symptoms such as stress and anxiety. Suldo, Shaunessy, and Hardesty (2008) investigated stress, coping, and mental health in high achieving high school students and suggested that family communication involving "relying on family members for social support in times of stress" may be an adaptive coping style for high achieving students.

Limitations and Future Research

There are some limitations to the current study. First, the quantitative study relies on a self-report measure of adolescents' procrastination tendencies with a potential bias in responding to the questionnaire. Although the qualitative study employed a semi-structured interviewing method, future research may also want to use an objective measure along with a reliable self-report measure to assess the actual instances of procrastination. Second, the study included only students' perspectives, leaving out other perspectives on the phenomenon. Thus, future research should involve parents' and teachers' perspectives in both quantitative and qualitative phases to complete the picture of how procrastination operates in adolescents. Third, the current study applied translated measures of motivation and procrastination originally designed in western cultures to assess such variables in Thai culture. In this study, the translated version of these measures was translated in a careful manner and deemed appropriate for using with Thai adolescents by an expert in motivation research and Thai culture.

However, researchers who would like to replicate or extend this study may benefit from developing indigenous procrastination and motivation measures suited to the local needs either for Thai culture or other cultures of interest.

Fourth, the samples across cultures were randomly selected from the two schools in an urban area and the number of participants in the qualitative phase was small (N = 14); therefore, the generalizability to larger populations may be limited. Further investigation exploring procrastination in a broad range of learning contexts would be beneficial. Because the current study involved only low and high achieving students and no data were obtained from students with moderate academic performance, future research should also include this moderate group of students for the interviews in favor of the generalizability and a better understanding of the topic. It should be noted that about 10% of the participants in the interviews were automatically excluded because of missing GPA data and this may affect the generalizability of the findings. In spite of some limitations, this mixed-methods study provided insights into assisting students who experience academic problem as a result of dysfunctional procrastination, with the role of academic motivation as the important key.

References

Ægisdóttir, S., Gerstein, L. A., & Canel Çinarbas, D. (2008). Methodological issues in cross-cultural counseling research: Equivalence, bias, and translations. *The Counseling Psychologist, 36,* 188-219.

Akinsola, M. K., Tella, A., & Tella, A. (2007). Correlates of academic procrastination and mathematics achievement of university undergraduate students. *Eurasia Journal of Mathematics, Science & Technology Education, 3,* 363-370.

Arbuckle, J. L. (2007). *Amos (Version 16.0) [Computer Program]*. Chicago: SPSS.

Balkis, M., & Duru, E. (2009). Prevalence of academic procrastination behavior among pre-service teachers, and its relationship with demographics and individual preferences. *Journal of Theory and Practice in Education, 5,* 18-32.

Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.), *Encyclopedia of human behavior* (Vol. 4, pp. 71-81). New York: Academic Press. Retrieved from http://www.des.emory.edu/mfp/BanEncy.html

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: W.H. Freeman and Company.

Bandura, A. (2002). Social cognitive theory in cultural context. *Journal of Applied Psychology: An International Review, 51,* 269-290.

Beck, B. L., Koons, S. R., & Milgrim, D. L. (2000). Correlates and consequences of behavioral procrastination: The effects of academic procrastination, self-consciousness, self-esteem, and self-handicapping. *Journal of Social*

Behavior and Personality, 15, 1-13.

Beswick, G, Rothblum, E. D., & Mann, L. (1988). Psychological antecedents of student procrastination. *Australian Psychologist, 23*, 207-217.

Bempechat, J., & Drago-Severson, E. (1999). Cross-national differences in academic achievement: Beyond etic conceptions of children's understandings. *Review of Educational Research, 69,* 287-314.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107,* 288-246.

Bernard, H. R. (2000). *Social research methods: Qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.

Bernard, H. R., & Ryan, G. W. (2010). *Analyzing qualitative data: Systematic approaches*. Thousand Oaks, CA: Sage.

Berry, J. W. (1980). Introduction to methodology. In H. C. Traindis, & J. W. Berry (Eds.), *Handbook of cross-cultural psychology*: *Methodology* (Vol.2, pp.1-28). Boston, MA: Allyn and Bacon.

Berry, J, W., Poortinga, Y. H., Segall, M. H., & Dasen, P. R. (1992). *Cross-cultural psychology: Research and application*. NY: Cambridge University Press.

Birner, L. (1993). Procrastination: Its role in transference and counter transference. *Psychoanalytic Review, 80,* 541-558.

Blunt, A., & Pychyl, T.A. (2005). Project systems of procrastinators: A personal project analytic and action control perspective. *Personality and Individual Differences, 38,* 1771-1780.

Bodas, J. & Ollendick, T, H. (2005). Test anxiety: A cross- cultural perspective. *Clinical Child and Family Psychology Review, 8*, 65-88.

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1*, 185-216.

Brislin, R. (1993). *Understanding culture's influence on behavior*. Orlando, FL: Harcourt Brace College Publishers.

Brownlow, S., & Reasinge, R. D. (2000). Putting off until tomorrow what is better done today: Academic procrastination as a function of motivation toward college work. *Journal of Social Behavior and Personality, 15,* 15-34.

Bryman, A. (2007). Barriers to integrating quantitative and qualitative research. *Journal of Mixed Methods Research, 1*, 8-22.

Byrne, B. M. (2009). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. (2nd ed.). New York: Routledge.

Byrne, B. M. (2006). *Structural equation modeling with EQS: Basic concepts, applications, and programming*. (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Burger, J. M. (2004). *Personality.* CA: Wadsworth/Thomson Learning.

Burka, J. B., & Yuen, L. M. (1983). *Procrastination: Why you do it, what to do about it*. Don Mills, ON: Addison Wesley.

Caprara, G.V., Fida, R., Vecchione, M., Del Bove, G., Vecchio, G. M., Barbaranelli, C., & Bandura, A. (2008). Longitudinal analysis of the role of perceived self-efficacy for self-regulated learning in academic continuance and achievement. *Journal of Educational Psychology, 100,*

525-534.

Carlock, C. J. (1999). *Enhancing self-esteem* (3rd ed.). Ann Arbor, MI: Edwards Brothers.

Cassady, J. C., & Johnson, R. E. (2002). Cognitive Test Anxiety and Academic Performance. *Contemporary Educational Psychology, 27,* 270–295.

Cha, E., Kim, K. H., & Erlen, J. A. (2007). Translation of scales in cross-cultural research: Issues and techniques. *Journal of Advanced Nursing, 58,* 386-395.

Chambers, E. (1992). Work-load and the quality of student learning. *Studies in Higher Education, 17,* 141-153.

Chen, F. F. (2008). What happens if we compare chopsticks with forks? The impact of making inappropriate comparisons in cross-cultural research. *Journal of Personality and Social Psychology, 95,* 1005-1018.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit- indexes for testing measurement invariance. *Structural Equation Modeling, 9,* 233-255.

Chiu, M., & Xihua, Z. (2008). Family and motivation effects on mathematics achievement: Analyses of students in 41 countries. *Learning and Instruction, 18,* 321-336.

Chu, A. H. C., & Choi, J. N. (2005). Rethinking procrastination: Positive effects of "active" procrastination behavior on attitudes and performance. *The Journal of Social Psychology, 145,* 245-264.

Church, T. A., & Lonner, W. J. (1998). The cross-cultural perspective in the study

of personality. *Journal of Cross-Cultural Psychology, 29,* 32-62.

Conner, J., Pope, D., & Galloway, M. (2009). Success with less stress. *Educational Leadership, 67,* 54-58.

CooperSmith, S. (1967). *The antecedents of self-esteem.* San Francisco: W.H. Freeman.

Creswell, John (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed method approaches*. Thousand Oaks: CA: Sage.

Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). Advance Mixed methods research designs. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social & behavioral research* (pp. 209-240). London: Sage.

Creswell, J. W., Fetters, M. D., & Ivankova, N. V. (2004). Designing a mixed methods study in primary care. *Annals of Family Medicine, 2,* 7-12.

Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and conducting mixed methods research.* Thousand Oaks, CA: Sage.

Dejitthirat, K. (2004). *Avoidance motivation: Its manifestation in goals across cultures*. Unpublished doctoral dissertation, University of Texas, Austin.

Dembo, M., and Eaton, M. (2000) Self regulation of academic learning in middle-level schools. *The Elementary School Journal, 100,* 473-490.

Deveney, B. (2005). An investigation into aspects of Thai culture and its impact on Thai students in an international school in Thailand. *Journal of*

Research in International Education, 4, 153-171.

Dietz, F., Hofer, M., & Fries, S. (2007). Individual values, learning routines and procrastination. *British Journal of Educational Psychology, 77,* 893–906.

Diseth, A. (2007). Students' evaluation of teaching, approaches to learning, and academic achievement. *Scandinavian Journal of Educational Research, 51,* 185-204.

Eaton, M. J., & Dembo, M. H. (1997). Differences in the motivation beliefs of Asian American and non-Asian students. *Journal of Educational Psychology, 89,* 433-440.

Elliot, A. J., McGregor, H. A., & Gable, S. (1999). Achievement goals, study strategies, and exam performance: A mediational analysis. *Journal of Educational Psychology, 3,* 549–563.

Elvers, G. C., Polzella, D. J., & Graetz, K. (2003). Procrastination in online courses: Performance and attitudinal differences. *Teaching of Psychology, 30,*159-162.

Ergene, T. (2003). Effective interventions on test anxiety reduction. *School Psychology International, 24,* 313-328.

Ezzy, D. (2002). *Qualitative analysis: Practice and innovation*. London: Routledge.

Farruggia, S. P., Chen, C., Greenberger, E., Dmitrieva, J., & Macek, P. (2004). Adolescent self-esteem in cross-cultural perspective: Testing measurement equivalence and a mediation model. *Journal of Cross-Cultural Psychology, 35,* 719-733.

Fee, R. L., & Tangney, J. P. (2000). Procrastination: A means of avoiding shame or guilt? *Journal of Social Behavior and Personality, 15,* 167-184.

Ferrari, J. R. (1991). Self-handicapping by procrastinators: Protecting self-esteem, social-esteem, or both? *Journal of Research in Personality, 25,* 245-261.

Ferrari, J. R. (1992). Psychometric validation of two procrastination inventories for adults: Arousal and avoidance measures. *Journal of Psychopathology and Behavioural Assessment, 14,* 97–110.

Ferrari, J.R., Diaz-Morales, J.F., O'Callaghan, J., Diaz, K., & Argumedo, D. (2007). Frequent behavioral delay tendency by adults: International prevalence rates of chronic procrastination. *Journal of Cross-Cultural Psychology, 38,* 458–464.

Ferrari, J. R., Johnson, J. L., & McCown, W. G. (1995). *Procrastination and task avoidance: Theory, research, and treatment*. New York: Plenum Press.

Ferrari, J.R., O'Callaghan, J., & Newbegin, I. (2005). Prevalence of procrastination in the United States, United Kingdom, and Australia: Arousal and avoidance delays among adults. *North American Journal of Psychology, 7,* 1–6.

Fischer, R., & Miu-Chi Lun, V. (2008). Measuring cognition and motivation across cultural groups. In R. M. Sorrentino & S. Yamaguchi (Eds.), *Handbook of motivation and cognition across cultures* (pp. 568-590). San Diego, CA: Elsevier.

Flick, U., Von Kardorff, E., & Steinke, I. (2004). *A companion to qualitative research*. London: Sage.

Garcia, T. (1995). The role of motivational strategies in self-regulated learning. *New Directions for Teaching and Learning, 63,* 29-42.

Garcia, T. & Pintrich, P.R. (1994). Regulating motivation and cognition in the classroom: the role of self-schemas and self-regulatory strategies. In D.H. Schunk and B.J. Zimmerman (Eds.), *Self-regulation on learning and performance: Issues and applications* (pp.132-157), NJ, Hillsdale, Lawrence Erlbaum Associates.

GN, C. (2000, December). *A cross-cultural comparison of the effects of self-schema on learning engagement*. Paper presented at the annual conference of Australian association for research in education, Sydney, Australia.

Greene, B. A., & Miller, R. B. (1996). Influences on achievement: Goals, perceived ability, and cognitive engagement. *Contemporary Educational Psychology, 21,* 181-192.

Guillemin, F., Bombardier, C., & Beaton, D. (1993). Cross-cultural adaptation of health-related quality of life measure: Literature review and proposed guidelines. *Journal of Clinical Epidemiology, 46,* 1417-1432.

Hambleton, R. K., Merenda, P. F., & Spielberger, C. D. (2005). *Adapting educational and psychological tests for cross-cultural assessment*. Mahwah, NJ: Lawrence Erlbaum.

Hagborg, W. J. (1993). The Rosenberg self-esteem scale and Harter's self-perception profile for adolescents: A concurrent validity study. *Psychology in the Schools, 30,* 132-136

Hair, J. F. Jr., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006).

Multivariate data analysis (6th ed.). Upper Saddle River, NJ: Pearson/Prentice Hall.

Harkness, S., & Keefer, C. H. (2000). Contributions of cross-cultural psychology to research and interventions in education and health. *Journal of Cross-Cultural Psychology, 31,* 92-109.

Harkness, S., Moscardino, U., Bermudez, M. R., Zylicz, P. O., Welles-Nystrom, B., Blom, M., Parminder, P., …Charles, S. M. (2006). Mixed methods in international collaborative research: The experiences of the international study of parents, children, and schools. *Cross-Cultural Research, 40,* 65-82.

Harkness, J. A., Van de Vijver, F. J. R., & Mohler, P. (Eds.). (2003). *Cross-cultural survey methods*. Hoboken, NJ: Wiley.

Harter, S. (1990). Cause, correlations and the functional role of global self-worth: A life - span perspective. In R. Sternberg & J. Kollogian Jr. (Eds.), C*ompetence considered* (pp.67-98). New Haven, CT: Yale University Press.

Haycock, L. A., McCarthy, P., & Skay, C. L. (1998). Procrastination in college students: The role of self-efficacy and anxiety. *Journal of Counseling and Development, 76,* 317-324.

Heine, S. J. (2004). Positive self-views: Understanding universals and variability across cultures. *Journal of Cultural and Evolutionary Psychology, 2,* 109-122.

Hitchcock, J. H., Sarkar, S., Nastasi, B. K., Burkholder, G., Varjas, K., &

Jayasena, A. (2006). Validating culture-and gender-specific constructs: A mixed method approach to advance assessment procedures in cross-cultural settings. *Journal of Applied School Psychology, 22,* 13-33.

Hofstede, G. (1991). *Cultural and organizations: Software of the mind*. London: McGraw-Hill.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations*. Thousand Oaks, London: Sage.

Holloway, I. (1997). *Basic concepts for qualitative research*. London: Blackwell Science.

Howell, A. J., & Watson, D. C. (2007). Procrastination: Associations with achievement goal orientation and learning strategies. *Personality and Individual Differences, 43,* 167-178.

Howell, A. J., Watson, D. C., Powell, R. A., & Buro, K. (2006). Academic procrastination: The pattern and correlates of behavioral postponement. *Personality and Individual Differences, 40,* 1519-1530.

Hsueh, K., Phillips, L. R., Cheng, W., & Fulton Picot, S. J. (2005). Assessing cross - cultural equivalence through confirmatory factor analysis. *Western Journal of Nursing Research, 27,* 755-771.

Jain, S., & Dowson, M. (2009). Mathematics anxiety as a function of multidimensional self-regulation and self-efficacy. *Contemporary Educational Psychology, 34,* 240-249.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A

research paradigm whose time has come. *Educational Researcher, 33,* 14-26.

Kennedy, G. J., & Tuckman, B. W. (May, 2010). *The mediating role of procrastination and perceived school belongingness on academic performance in first term freshmen*. Paper presented at the annual conference of the American Educational Research Association, Denver, CO.

Kitayama, B., & Morling, S. (2008). Culture and motivation. In J. Y. Shah & W. L. Gardner(Eds.), *Handbook of motivation science* (pp. 417-433). New York: Guilford Press.

Klassen, R. M. (2004). Optimism and realism: A review of self-efficacy from a cross-cultural perspective. *International Journal of Psychology, 39,* 205-230.

Klassen, R. M., & Cetinkale, E. (2009). Academic procrastination and motivation of adolescents in Turkey. *Educational Psychology, 29,* 69-81.

Klassen, R. M., Ang, R., Chong, W. H., Krawchuk, L. L., Huan, V., Wong, I., & Yeo, L. S. (2009). A cross - cultural study of adolescent procrastination. *Journal of Research on Adolescence, 19,* 799-811.

Klassen, R. M., Krawchuk, L. L., Lynch, S. L., & Rajani, S. (2008). Procrastination and motivation of undergraduates with learning disabilities: A mixed methods inquiry. *Learning Disabilities Research and Practice, 23,* 137-147.

Kline, R. B. (2005). *Principles and practice of structural equation modeling*. (2nd ed.). New York: Guilford.

Komarraju, M., Karau, S. J., & Ramayah, T. (2007). Cross-cultural differences in the academic motivation of university students in Malaysia and the United States. *North American Journal of Psychology, 9,* 275-292.

Komin, S. (1978). Some empirical evidence of Thai value and personality. *The Thai Journal of Development Administration, 3*, 271-292.

Komin, S. (1991). *Psychology of the Thai People: Values and behavioral patterns*. National Institute of Development Administration, Bangkok, Thailand

Krawchuk, L. L. (2008). *Procrastination, self-efficacy calibration, anxiety, and achievement in undergraduate students*. (Unpublished master's thesis). University of Alberta, Edmonton, Alberta, Canada.

Kristjansson, E. A., Desrochers, A., & Zumbo, B. (2003). Translating and adapting measurement instruments for cross-linguistic and cross-cultural research: A guide for practitioners. *Canadian Journal of Nursing Research, 35,* 127-142.

Kumar, R., & Maehr, M. L. (2007). Cultural interpretations of achievement motivation: A situated perspective. In F. Salili & R. Hoosain (Eds.), *Culture, motivation, and learning: A multicultural perspective* (pp. 43-66). Charlotte, NC: Information Age Publishing.

Lau, K., & Chan, D. W. (2001). Motivational characteristics of under-achievers in Hong Kong. *Educational Psychology, 21*, 417-430.

Lay, C. H., Knish, S., & Zanatta, R. (1992). Self-handicappers and procrastination: A comparison of their practice behavior prior to an evaluation. *Journal of Research in Personality, 26,* 242-257.

Lian, T. C., & Yusooff, F. (2009). The effects of family functioning on self-esteem of children. *European Journal of Social Sciences, 9,* 643-650.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Beverly Hills, CA: Sage.

Maassen, G. H., & Bakker, A. B. (2001). Suppressor variables in path models: Definitions and interpretations. *Sociological Methods & Research, 30,* 241-270.

Matsumoto, D. (2001). Cross-cultural psychology in the 21st century. In J. S. Halonen & S. F. Davis (Eds.). *The many faces of psychological research in the 21st century (chap. 5).* Retrieved from http://teachpsych.org/resources/e-books/faces/script/ch05.htm

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98,* 224-253.

Martín-Albo, J., Núñez, J. L., Navarro, J. G., & Grijalvo, F. (2007). The Rosenberg self-esteem scale: Translation and validation in university students. *The Spanish Journal of Psychology, 10,* 458-467.

McInerney, D. M. (2008). The motivational roles of cultural differences and cultural identity in self-regulated learning. In D. H. Schunck & B. J. Zimmerman (Eds.), *Motivation and self-regulated learning*: *Theory,*

research, and applications (pp. 369-400). New York: Erlbaum.

Meyers, L. S., Gamst, G., & Guarino, A. J. (2006). *Applied multivariate research: Design and interpretation*. Thousands Oaks, CA: Sage.

Milgram, N., Marshevsky, S., & Sadeh, C. (1995). Correlates of academic procrastination: Discomfort, task aversiveness, and task capability, *Journal of Psychology, 129,* 145–155.

Milgram, N., & Toubiana, Y. (1999). Academic anxiety, academic procrastination, and parental involvement in students and their parents. *British Journal of Educational Psychology, 69,* 345–361.

Mills, N., Parajes, F., & Herron, C. (2006). A reevaluation of the role of anxiety: Self-efficacy, anxiety, and their relation to reading and listening proficiency. *Foreign Language Annals, 39,* 273-292.

Moon, S. M., & Illingworth, A. J. (2005). Exploring the dynamic nature of procrastination: A latent growth curve analysis of academic procrastination. *Personality and Individual Differences, 38,* 297-309.

Morgan, D. L. (1998). Practical strategies for combining qualitative and quantitative methods: Application to health research. *Qualitative Health Research, 8,* 362-376.

Muis, K. R., & Franco, G. M. (2009). Epistemic beliefs: Setting the standards for self-regulated learning. *Contemporary Educational Psychology, 34,* 306–318.

Mendelson, N. (2007). The functional mediation of flow between achievement anxiety, academic procrastination, and academic performance.

Dissertation Abstracts International, 68, 1936.

Newman, W. L. (2007). *Basics of social research: qualitative and quantitative approaches*. Boston: Pearson/Allyn and Bacon.

O'Cathain, A., Murphy, E., & Nicholl, J. (2007). Integration and publications as indicators of "yield" from mixed methods studies. *Journal of Mixed Methods Research, 1,* 147-163.

Oettingen, G., & Zosuls, K. M (2006). Culture and self-efficacy in adolescents. In F. Pajares & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (pp. 245-265). Greenwich, CT: Information Age.

Office of the Education Council. (2004). *Education in Thailand 2004*. Bangkok: Amarin Printing and Publishing.

Onwuegbuzie, A. J. (2004). Academic procrastination and statistics anxiety. *Assessment and Evaluation in Higher Education, 29,* 1-19.

Pajares, F. (1996). Self-efficacy beliefs in academic setting. *Review of Educational Research, 66,* 543-578.

Pajares, F. (2003). Self-efficacy beliefs, motivation, and achievement in writing: A review of literature. *Reading and Writing Quarterly, 19,* 139-158.

Pajares, F. (2006). Self-efficacy during childhood and adolescence: Implications for teachers and parents. In F. Pajares & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (pp. 339-367). Greenwich, CT: Information Age.

Pajares, F., & Schunk, D. H. (2002). Self and self-beliefs in psychology and education: A historical perspective. In J. Aronson (Ed.), *Improving academic achievement: Impact of psychological factors on education*, (pp.

3-21). San Diego, CA: Academic Press.

Patton, M. Q. (2002). *Qualitative research and evaluation methods*. Thousands Oaks, CA: Sage.

Pekrun, R. , Goetz, T., Daniels, L. M., Stupnisky, R. H., & Perry, R. P. (2010). Boredom in achievement settings: Exploring control–value antecedents and performance outcomes of a neglected emotion. *Journal of Educational Psychology, 102,* 531-549.

Peleg-Popko, O., Klingman, A., & Nahhas, I. A. (2003). Cross-cultural and familial differences between Arab and Jewish adolescents in test anxiety. *International Journal of Intercultural Relations, 27,* 525–541.

Pena, E. D. (2007). Lost in translation: Methodological considerations in cross – cultural research. *Child Development, 78,* 1255-1264.

Pintrich, P. R. (1995). Understanding self-regulated learning. *New Directions for Teaching and Learning, 63,* 3-12.

Pintrich, P. R. (1999). The role of motivation in promoting and sustaining self-regulated learning. *International Journal of Educational Research, 31,* 459-470.

Pintrich, P. R., & De Groot, E. V. (1990). Motivation and self-regulated learning component of classroom academic performance. *Journal of Educational Psychology, 82,* 33-40.

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) (*Tech. Rep. No. 91-B-004). Ann Arbor, MI: National Center for Research

to Improve Postsecondary Teaching and Learning.

Pintrich, P. R., Smith, D. A., Garcia, T., & McKeachie, W. J. (1993). Reliability and predictive validity of the motivated strategies for learning questionnaire (MSLQ). *Educational and Psychological Measurement, 53,* 801–813.

Popoola, B.I. (2005).A study of the relationship between procrastinatory behaviour and academic performance of undergraduate students in a Nigerian University. *African Symposium: An Online Journal of Educational Research Network, 5,* 60-65. Retrieved from http://www.ncsu.edu/aern/TAS5.1/TAS5.1.pdf

Prohaska, V., Morrill, P., Atiles, I, & Perez, A. (2000). Academic procrastination by nontraditional students. *Journal of Social Behavior and Personality, 15,* 125-134.

Pychyl, T. A., Coplan, R. J., & Reid, P. A. M. (2002). Parenting and procrastination: Gender differences in the relations between procrastination, parenting style, and self-worth in early adolescence. *Personality and Individual Differences, 33,* 271-285.

Pychyl, T. A. Lee, J. M., Thibodeau, R., & Blunt, A. (2000). Five days of emotion: An experience sampling study of undergraduate student procrastination. *Journal of Social Behavior and Personality, 15,* 239-254.

Pychyl, T. A., Morin, R. W., & Salmon, B .R. (2000). Procrastination and the planning fallacy: An examination of the study habits of university students. *Journal of Social Behavior and Personality, 15,* 135-150.

Ramsden, P. (1992). *Learning to teach in higher education* (2nd ed.) [Adobe Reader Version]. Retrieved from http://lib.myilibrary.com.login.ezproxy.library.ualberta.ca/Open.aspx?id=2596&loc=&srch=undefined&src=0

Randy, C., Courtney, B., & Rebekah, M. (2004). Locus of control, test anxiety, academic procrastination, and achievement among college students. *Psychological Reports, 95,* 581-582.

Reisinger, Y., & Turner, L. W. (2003). *Cross-cultural behaviour in Tourism: Concepts and analysis*. Jordan Hill, Oxford: Butterworth-Heinemann.

Rieckmann, T., Fuller, B. E., Saedi, G. A., & McCarty, D. (2010). Adoption of practice guidelines and assessment tools in substance abuse treatment. *Substance Abuse Treatment, Prevention, and Policy, 5,* 1-9.

Robins, R. W., Trezesniewski, K. H., Tracy J. L., Gosling, S. D., & Potter J. (2002). Global self-esteem across the life span. *Psychology and Aging, 17,* 423-434.

Rosário, P., Costa, M., Nunez, J. C., Gonzalez-Pienda, J., Solano, P., & Valle, A. (2009). Academic procrastination: Associations with personal, school, and family variables. *The Spanish Journal of Psychology, 12,* 118-127.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Rosenberg, M. (1979). *Conceiving the self*. New York: Basic Book.

Ross, R., Zeller, R., Srisaeng, P., Yimmee, S., Somchild, S., & Sawatphanit, W. (2005). Depression, stress, emotional support, and self-esteem among

baccalaureate nursing students in Thailand. *International Journal of Nursing Educational Scholarship, 2,* 1-15.

Rothblum, E. D., Solomon, L. J., & Murakami, J. (1986). Affective, cognitive, and behavioral differences between high and low procrastinators. *Journal of Counseling Psychology, 33,* 387-394.

Rusticus, S. A., Hubley, A. M., & Zumbo, B. D. (2004, July). *Cross-national comparability of the Rosenberg self-esteem scale*. Poster session presented at the annual meeting of American Psychological Association, Honolulu, HI.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well being. *American Psychologist, 55,* 68-78.

Salili, F. (1994). Age, sex, and cultural differences in the meaning and dimensions of achievement. *Personality and Social Psychology Bulletin, 20,* 635-648.

Salkind, N. J. (2010). Statistics for people who (think they) hate statistics: Excel 2007 edition. Thousand Oaks, CA: Sage.

Simpson, W.K., & Pychyl, T.A. (2009). In search of the arousal procrastinator: An investigation of the relation between procrastination, arousal-based personality traits, and beliefs about procrastination motivations. *Personality and Individual Differences, 47,* 906-911.

Scher, S. J., & Osterman, N. M. (2002). Procrastination, conscientiousness, anxiety, and goals: Exploring the measurement and correlates of procrastination among school-aged children. *Psychology in the Schools,*

39, 385-397.

Schmitt, D. P., & Allik, J. (2005). Simultaneous administration of the Rosenberg self-esteem scale in 53 nations: Exploring the universal and culture-specific features of global self-esteem. *Journal of Personality and Social Psychology, 89,* 623-642.

Schraw, G., Wadkins, T., & Olafson, L. (2007). Doing the things we do: A grounded theory of academic procrastination. *Journal of Educational Psychology, 99,* 12–25.

Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *Journal of Educational Research, 99,* 323-337.

Schunk, D. H.. & Zimmerman, B. J. (Eds.). (1994). *Self-regulation of learning and performance: Issues and educational implications* (pp. 75-99). Hillsdale, NJ: Erlbaum.

Seipp, B., & Schwarzer, C. (1996). Cross-cultural anxiety research: A review. In C. Seipp & Schwarzer, & M. Zeidner (Eds.), *Stress, anxiety, and coping in academic settings* (pp.13-68). Tubingen, Germany: Francke-Verlag.

Senecal, C., Koestner, R., & Vallerand, R.J. (1995). Self-regulation and academic procrastination. *The Journal of Social Psychology, 135,* 607-619.

Shawyun, T., & Tanchaisak, K. (2005). Core values of Thai undergraduates revisited in 2005: A case study of Assumption University. *APHEIT Journal, 12,* 71-84.

Shiraev, E., & Levy, D. (2004). *Cross-cultural psychology: Critical thinking and*

contemporary applications. Boston, MA: Person Education.

Singelis, T. M., Triandis, H. C., Bhawuk, D. P. S., & Gelfand, M. J. (1995). Horizontal and vertical dimensions of individualism and collectivism: A theoretical and measurement refinement. *Cross-Cultural Research, 29,* 240-275.

Singh, K., Granville, M., & Dika, S. (2002). Mathematics and science achievement: Effects of motivation, interest, and academic engagement. *The Journal of Educational Research, 95,* 323-331.

Siriphan et al., (2002). Self-esteem and student nurses: A cross-cultural study of nursing students in Thailand and the UK. *Nursing and Health Sciences, 4,* 9-14.

Small, R., Yelland, J., Lumley, J., Rice, P. L., Cotronei, V., & Warren, R. (1999). Cross-cultural research: Trying to do it better 2. Enhancing data quality. *Australian and New Zealand Journal of Public Health, 23,* 390-395.

Solomon, L. J. & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive - behavioral correlates. *Journal of Counseling Psychology, 31,* 503-509.

Spada, M. M., Hiou, K., & Nikcevic, A.V. (2006). Metacognitions, emotions, and procrastination. *Journal of Cognitive Psychotherapy: An International Quarterly, 20,* 319-326.

Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin, 133,* 65-94.

Steel, P., Brothen, T., & Wambach, C. (2001). Procrastination and personality, performance, and mood. *Personality and Individual Differences, 30,* 95-106.

Stein, J. A., Lee, J. W., & Jones, P. S. (2006). Assessing cross-cultural differences through use of multiple-group invariance analyses. *Journal of Personality Assessment, 87,* 249-258.

Suldo, S. M., Shaunessy, E., & Hardesty, R. (2008). Relationships among stress, coping, and mental health in high-achieving high school students. *Psychology in the Schools, 45,* 273-290.

Tabachnick, B. G., & Fidell, L.S. (2007). *Using multivariate statistics*. (5th ed.). Boston: Allyn & Bacon.

Tan, C. X., Rebecca P. A., Klassen, R. M., See Yeo, L., Wong, I. Y. F., Huan, V. S., et al. (2008). Correlates of academic procrastination and students' grade goals. *Current Psychology, 27,* 135–144.

Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.

Tashakkori, A., & Creswell, J. W. (2007). Editorial: The new era of mixed methods. *Journal of Mixed Methods Research, 1,* 3-7.

Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Los Angles, CA: Sage.

Thato, S., Hanna, K. M., & Rodcumdee, B. (2005). Translation and validation of the condom self-efficacy scale with Thai adolescents and youth adults.

Journal of Nursing Scholarship, 37, 36-40.

Thompson, K. M. (2003). *The impact of a cognitive-behavioral program on test anxiety symptoms in high school students*. Unpublished doctoral dissertation, Murdoch University, Perth, Australia.

Tice, D. M., & Baumeister, R. F. (1997). Longitudinal study of procrastination, performance, stress, and health: The costs and benefits of dawdling. *Psychological Science, 8,* 454-458.

Teowkul, K., Seributra, N. J., Sangkaworn, C., Jivasantikarn, C., Denvilai, S, & Mujtaba, B. G. (2009). Motivational factors of graduate Thai students pursuing master and doctoral degrees in Business. *RU International Journal, 3*, 25-56.

Triandis, H. C. (1995). *Individualism and collectivism*. Boulder, CO: Westview Press.

Triandis, H. C. (1996). The psychological measurement of cultural syndromes. *American Psychologist, 51,* 407-415.

Triandis, H. C. (2004). The many dimensions of culture. *Academy of Management Executive, 18,* 88-93.

Triandis, H. C. (2007). Culture and psychology: A history of the study of their relationship. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology* (pp.59-76). NY: The Guilford Press.

Trudeau, T. L. (2009). *Test anxiety in high achieving students*. (Unpublished doctoral dissertation). University of Alberta, Edmonton, Alberta, Canada.

Trezesniewski, K. H., Robins, R.W., & Roberts B.W. (2005). Self-esteem

development across the life span. *Current Directions in Psychological Science, 14,* 158-161.

Tuckman, B. W. (1991). The development and concurrent validity of the Procrastination scale. *Educational and Psychological Measurement, 51,* 473-480.

Tuckman, B. W. (2002, August). *Academic Procrastinators: Their rationalizations and web-course performance*. Paper presented at the annual meeting of the American Psychological Association, Chicago, IL.

Urdan, T., Solek, M., & Schoenfelder, E. (2007). Students' perceptions of family influences on their academic motivation: A qualitative analysis. *European Journal of Psychology Education, 22,* 7-21.

Usher, E. L., & Pajares, F. (2008). Self-efficacy for self-regulated learning: A validation study. *Educational and Psychological measurement, 68,* 443-463.

Van de Vijver, F. J. R. (1998). Towards a theory of bias and equivalence. *Zuma Nachrichten, 3,* 41-65. Retrieved from http://arno.uvt.nl/show.cgi?fid=46374

Van de Vijver, F. J. R., & Hambleton, R. K. (1996). Translating tests: Some practical guidelines. *European Psychologist, 1,* 89-99.

Van de Vijver, F. J. R., & Leung, K. (1997). *Methods and data analysis for cross-cultural research.* Thousand Oaks, CA: Sage.

Van de Vijver, F. J. R., & Tanzer, N. K. (2004). Bias and equivalence in cross-cultural assessment: An overview. *European Review of Applied*

Psychology, 47, 119-135.

Van Eerde, W. (2000). Procrastination: Self-regulation in initiating aversive goals. *Applied Psychology: An International Review, 49,* 372-389.

Van Eerde, W. (2003). A meta-analytically derived nomological network of procrastination. *Personality and Individual Differences, 35,* 1401-1418.

Vazile-Tamsen, C., & Jennifer, L. A. (1999). The differential impact of motivation on the self-regulatory strategy use of high-and low-achieving college students. *Journal of College Student Development, 40,* 54-60.

Vondras, D. D. (2005, May). *Influence of individualism-collectivism on learning barriers and self-efficacy of performance ratings in an introductory life-span development course*. Paper presented at the annual meeting of the American Psychological Association, Los Angeles, CA.

Webber, R. P. (1990). *Basic content analysis*. (2nd ed.). Newbury Park, CA: Sage.

Weiber, F., & Gollwitzer, P. M. (2010). Overcoming procrastination through planning. In C. Andreou, & M. D. White (Eds.), *The thief of time: Philosophical essays on procrastination* (pp. 185-205). New York: Oxford University Press.

Wesley, J. C. (1994). Effects of ability, high school achievement, and procrastinatory behavior on college performance. *Educational and Psychological Measurement, 54,* 404-408.

Wikman, E. C. (2001). *Experiences of chronic procrastination*. (Unpublished doctoral dissertation). University of Alberta, Edmonton, Alberta, Canada.

Wolter, C. A. (2003). Understanding procrastination from a self-regulated learning

perspective. *Journal of Educational Psychology, 95,* 179-187.

Wolters, C. A., & Pintrich, P. R. (1998). Contextual differences in student motivation and self-regulated learning in mathematics, English, and social studies classroom. *Instructional Science, 26,* 27-47.

Wolters, C. A., & Rosenthal, H. (2000). The relation between students' motivation beliefs and their use of motivation regulation strategies. *International Journal of Educational Research, 33,* 801-820.

Wongsri, N. (2004). *A cross-cultural and cross disciplinary comparison of some components of self-regulated learning*. (Unpublished doctoral dissertation). University of Newcastle, Newcastle, Australia.

Yam, B. M. C., Lopez, V., & Thompson, D. R. (2004). The Chinese version of the PSS: PICU. *Nursing Research, 53,* 19-27.

Yin, P., & Fan, X. (2003). Assessing the factor structure invariance of self-concept measurement across ethnic and gender groups: Findings from a national sample. *Educational and Psychological Measurement, 63,* 296-318.

Yong, F. L. (2010). A study on the assertiveness and academic procrastination of English and Communication students at a private university. *American Journal of Scientific Research, 9,* 62-71.

Yu, N. (2001). What does our face mean to us? *Pragmatics and Cognition, 9,* 1-36.

Zeidner, M. (1998). *Test Anxiety: The state of the art*. New York: Plenum Press.

Zimmerman, B. J. (1986). Becoming a self-regulated learner: Which are the key subprocesses? *Contemporary Educational Psychology, 11,* 307-313.

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive erspective.

In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp.13-39). San Diego, CA: Academic Press.

Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. *American Educational Research Journal, 29,* 663-676.

Zimmerman, B. J., & Cleary, T. J. (2006). Adolescents' development of personal agency: The role of self-efficacy beliefs and self-regulatory skill. In F. Pajares & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (pp. 45-69). Greenwich, CT: Information Age.

Zimmerman, B. J., & Martinez Pons, M. (1986). Development of a structured interview for assessing student use of self-regulated learning strategies. *American Educational Research Journal, 23,* 614-628.

Table 1.1

Summary of Missing data for the Canadian Adolescents

	Missing	
	Count	Percent (%)
Procrastination	3	.90
Self-esteem	12	3.7
Self-Efficacy	0	0
Self-Efficacy for SRL	0	0
Test Anxiety	0	0
GPA	8	2.56

Note: SRL = Self-efficacy for self-regulated learning

Table 1.2

Summary of Missing data for the Thai Adolescents

	Missing	
	Count	Percent(%)
Procrastination	12	2.8
Self-esteem	8	1.8
Self-Efficacy	3	.70
Self-Efficacy for SRL	3	.70
Test Anxiety	3	.60
GPA	52	14.89

Note: SRL = Self-efficacy for self-regulated learning

Table 2.1

Summary of Skewness and Kurtosis for the Canadian Adolescents

	Skewness	Kurtosis
	Statistic	Statistic
Academic Procrastination	.313	.350
Self-efficacy	-.706	.384
Self-efficacy for SRL	-.442	-.349
Test Anxiety	.370	-.642
Negative Self-esteem	.446	-.554
Positive Self-esteem	-.674	.484

Table 2.2

Summary of Skewness and Kurtosis for the Thai Adolescents

	Skewness	Kurtosis
	Statistic	Statistic
Academic Procrastination	.160	-.092
Self-efficacy	-.273	.584
Self-efficacy for SRL	.070	-.286
Test Anxiety	-.078	.299
Negative Self-esteem	.139	.030
Positive Self-esteem	-.277	.436

Table 3

Factor Loadings of Items from the Procrastination and Motivation Scales and Reliability Coefficients

Items	Canadian		Thai	
	Original	Final	Original	Final
Procrastination	α =.87	α	α =.67	α=.74
1. I delay finishing jobs, even when they're important.	.70	=.85 .69	.51	.50
2. I postpone starting on things I don't like to do.	.64	-	.27	-
3. When I have a deadline, I wait till the last minute.	.64	.62	.47	.49
4. I delay making tough decisions.	.35	.35	.36	.38
5. I keep putting off improving my work habits.	.52	-	.23	-
6. I manage to find an excuse for not doing something.	.53	.54	.47	.45
7. I put the necessary time into boring tasks, like studying.	.54	-	.16	-
8. I am a hopeless time waster.	.60	.59	.62	.61
9. I am a time waster and I can't seem to do anything about it.	.64	.63	.57	.58
10. When something's too tough to tackle, I postpone it.	.50	.51	.44	.47
11. I promise myself I'll do something but then I don't do it.	.60	.60	.47	.47
12. Whenever I make a plan of action, I follow it.	.58	-	.29	-
13. Even though I hate myself if I don't get started, it doesn't get me going.	.57	.57	.30	.34
14. I finish important jobs with time to spare.	.65	-	.27	-
15. I have a hard time getting started.	.56	.55	.46	.43
16. I try not to put things off until tomorrow.	.40	-	.20	-

Table 3(continued)

Factor Loadings of Items from the Procrastination and Motivation Scales and Reliability Coefficients

Items	Canadian		Thai	
	Original	Final	Original	Final
Positive Self-Esteem	α = .83	α =.83	α = .72	α =.72
1. On the whole, I am satisfied with myself.	.77	.77	.46	.46
3. I feel that I have a number of good qualities.	.72	.72	.71	.71
4. I am able to do things as well as most other people.	.56	.56	.54	.54
7. I feel that I'm a person of worth, on an equal plane with others.	.73	.73	.69	.69
10. I take a positive attitude toward myself.	.77	.76	.51	.51
Negative Self-Esteem	α = .84	α = .82	α = .66	α = .78
2. At times, I think I am no good at all.	.71	.70	.67	.67
5. I feel I do not have much to be proud of	.71	.71	.70	.70
6. I certainly feel useless at times.	.71	.72	.76	.76
8. I wish I could have more respect for myself.	.65	-	-.08	-
9. All in all, I am inclined to feel that I am a failure.	.77	.77	.65	.65
Self-Efficacy	α =.88	α =.88	α =.82	α = .82
1. I am confident I can understand the most difficulty material presented in the readings in most of my classes.	.81	.81	.65	.65
2. I am confident I can understand the basic concepts taught in most of my classes.	.66	.66	.67	.67
3. I am confident I can understand the most complex material presented by my teachers.	.82	.82	.72	.72
4. I am confident I can do an excellent job on the assignments and tests in my classes.	.77	.77	.65	.65
5. I am confident I can master the skills being taught in my classes.	.82	.82	.77	.77

Table 3 (continued)

Factor Loadings of Items from the Procrastination and Motivation Scales and Reliability Coefficients

Items	Canadian		Thai	
	Original	Final	Original	Final
Self-Efficacy for Self-Regulation Learning	α = .86	α = .86	α = .88	α = .88
1. Finish assignments by deadlines?	.68	68	.66	.66
2. Study when there are other interesting things to do?	.72	.72	.56	.56
3. Concentrate on your classes?	.71	.71	.66	.66
4. Take notes during class?	.46	.46	.60	.60
5. Use the library to get information for assignments?	.54	.54	.48	.48
6. Plan to do your homework/classwork?	.73	.73	.80	.80
7. Organize your homework/classwork?	.75	.75	.77	.77
8. Remember information presented in class and textbooks?	.42	.42	.70	.70
9. Arrange a place to study without distractions?	.57	.57	.51	.51
10. Motivate yourself to do homework/classwork?	.71	.71	.70	.70
11. Participate in class discussions?	.34	.34	.51	.51
Test Anxiety	α = .83	α = .83	α = .72	α = .72
1. When I take a test I think about how poorly I am doing compared with other students.	.67	.67	.61	.61
2. When I take a test I think about items on other parts of the test I can't answer.	.53	.53	.40	.40
3. When I take tests I think of the consequences of failing.	.67	.67	.65	.65
4. I have an uneasy, upset feeling when I take an exam.	.85	.85	.71	.71
5. I feel my heart beating fast when I take an exam.	.78	.78	.53	.53

Table 4

Confirmatory Factor Analysis on the Procrastination and Motivation Scales

	df	χ^2	χ^2/df	CFI	RMSEA	Freed error terms
10-item Procrastination						
Canada						
Original	35	122.04**	3.49	.89	.09	
Baseline	34	77.12**	2.27	.95	.06	8,9
Thailand						
Original	35	101.38**	2.90	.88	.07	
Baseline	34	60.80	1.79	.95	.04	8,9
Multi-group Baseline	68	137.93**	2.03	.95	.04	
1-factor Self-Esteem						
Canada						
Original	27	130.69**	4.84	.92	.11	
Baseline	26	76.70**	2.95	.96	.08	2,6
Thailand						
Original	27	171.77**	6.36	.85	.12	
Baseline	26	163.05**	6.28	.85	.11	2,6
Multi-group Baseline	52	239.73**	4.6	.91	.07	
2-factor Self-Esteem						
Canada						
Original	26	94.29**	3.63	.95	.09	
Baseline	25	56.84**	2.27	.97	.06	1,3
Thailand						
Original	26	63.96**	2.46	.96	.06	
Baseline	26	63.96**	2.46	.96	.06	
Multi-group Baseline	51	120.80**	2.40	.97	.04	
Self-Efficacy						
Canada						
Original	5	77.50**	15.50	.91	.22	
Baseline	4	10.28	2.57	.99	.07	1,3
Thailand						
Original	5	11.37	11.37	.99	.06	
Baseline	5	11.37	11.37	.99	.06	
Multi-group Baseline	9	21.66**	2.41	.99	.04	

Table 4 (continued)

Confirmatory Factor Analysis on the Procrastination and Motivation Variables

	df	χ^2	χ^2/df	CFI	RMSEA	Freed error terms
Self-Efficacy for Self-Regulation						
Canada						
Original	44	240.46**	5.47	.84	.12	
Baseline	42	106.77**	2.54	.95	.07	6,7;9,10
Thailand						
Original	44	248.19**	5.64	.88	.11	
Baseline	42	123.83**	2.95	.95	.07	6,7;4,11
Multi-group Baseline	84	230.60**	2.75	.95	.05	
Test Anxiety						
Canada						
Original	5	55.93**	11.19	.91	.18	
Baseline	3	.53	.18	1.0	.00	2,3;4,5
Thailand						
Original	5	27.36**	5.47	.93	.11	
Baseline	4	7.52	1.88	.99	.05	4,5
Multi-group Baseline	7	8.04	1.15	1.0	.01	

Table 5

Invariance of the Factor Structure of Procrastination and Motivation Scales

Model	df	$\chi 2$	$\chi 2$/df	CFI	RMSEA	Δdf	$\Delta\chi^2$	ΔCFI
Procrastination								
1. Baseline two-group model, no constraints	68	137.93*	2.03	.95	.04	-	-	-
2. Factor loadings constrained to be equal across groups	77	145.81*	1.89	.95	.04	9	7.89	.00
3. Model 2 with factor variances constrained to be equal across groups	78	154.22*	1.98	.94	.04	10	16.30	.01
2- Factor Self-Esteem								
1. Baseline two-group model, no constraints	51	120.80*	2.37	.97	.04	-	-	-
2. Factor loadings constrained to be equal across groups	58	148.74*	2.57	.96	.04	7	27.94*	.01
3. Model 2 with factor variances constrained to be equal across groups	61	174.40*	2.86	.95	.05	10	53.60*	.02
Negative Self-Esteem								
1. Baseline two-group model, no constraints	3	4.12	1.37	1.0	.02	-	-	-
2. Factor loadings constrained to be equal across groups	6	18.07*	3.0	.99	.05	3	13.95*	.01
3. Model 2 with factor variances constrained to be equal across groups	7	20.45*	2.9	.99	.05	4	16.33*	.01
Self-Efficacy								
1. Baseline two-group model, no constraints	9	21.66*	2.41	.99	.04	-	-	-
2. Factor loadings constrained to be equal across groups	13	37.94*	2.92	.98	.05	4	16.29*	.01
3. Model 2 with factor variances constrained to be equal across groups	14	38.12*	2.72	.98	.05	5	16.46*	.01
Self-Efficacy for Self-Regulated Learning								
1. Baseline two-group model, no constraints	84	230.56*	2.75	.95	.05	-	-	-
2. Factor loadings constrained to be equal across groups	94	269.56*	2.87	.94	.05	10	39.0*	.01
3. Model 2 with factor variances constrained to be equal across groups	95	270.22*	2.85	.94	.05	11	39.63*	.01
Test Anxiety								
1. Baseline two-group model, no constraints	7	8.04	1.15	1.0	.01	-	-	-
2. Factor loadings constrained to be equal across groups	11	9.31	.85	1.0	.00	4	1.27	.00
3. Model 2 with factor variances constrained to be equal across groups	12	19.47	1.62	.99	.03	5	11.43*	.01

Table 6

Testing for the Invariance of the Causal Structure of Procrastination and Motivation Variables across Canada and Thailand

Model	df	χ^2	χ^2/df	CFI	RMSEA	Δdf	$\Delta\chi^2$	ΔCFI
The hypothesized model (Figure 2)								
1. Baseline two-group model, no constraints	1446	2666.72*	1.84	.88	.03	-	-	-
2. Factor loadings constrained to be equal across groups	1480	2766.62*	1.87	.88	.04	34	99.9*	.00
3. Model 2 with the structural regression paths constrained to be equal across groups	1483	2904.70*	1.96	.87	.04	37	237.98*	.01
4. Model 3 with factor variance and covariance constrained to be equal across groups	1497	2972.74*	1.98	.86	.04	51	306.02*	.02
The modified model with positive self-esteem dropped								
1. Baseline two-group model, no constraints	1091	2055.47*	1.88	.89	.04	-	-	-
2. Factor loadings constrained to be equal across groups	1121	2121.95*	1.89	.89	.04	30	71.78*	.00
3. Model 2 with the structural regression paths constrained to be equal across groups	1125	2145.71*	1.91	.89	.04	30	71.78*	.00
4. Model 3 with factor variance and covariance constrained to be equal across groups	1134	2204.11*	1.94	.88	.04	39	130.18*	.01

Table 7.1

Means and Standard Deviations (SD) for Canadian and Thai Adolescents

	Canada		Thailand	
	Mean	SD	Mean	SD
Procrastination	21.56	5.49	22.10	4.7
Self-Efficacy	26.59	5.35	19.73	5.5
Self-Efficacy for SRL	53.08	11.42	46.87	11.51
Test Anxiety	18.4	7.73	21.23	6.27
Positive Self-Esteem	15.98	2.70	14.57	2.35
Negative Self-Esteem	7.8	2.77	9.4	2.54
GPA	78.42	8.77	3.01	.58

Table 7.2

Item Means and Standard Deviations (SD) for Canadian and Thai Adolescents

	Canada		Thailand	
Items	Mean	SD	Mean	SD
Procrastination				
1. I delay finishing jobs, even when they're important.	2.04	.82	2.12	.83
2. When I have a deadline, I wait till the last minute.	2.21	.86	2.12	.95
3. I delay making tough decisions.	2.19	.94	2.32	.89
4. I manage to find an excuse for not doing something.	2.40	.91	2.26	.93
5. I am a hopeless time waster.	1.92	.89	1.93	.86
6. I am a time waster and I can't seem to do anything about it.	1.74	.82	1.90	.86
7. When something's too tough to tackle, I postpone it.	2.26	.83	2.41	.84
8. I promise myself I'll do something but then I don't do it.	2.31	.92	2.44	.90
9. Even though I hate myself if I don't get started, it doesn't get me going.	2.03	.92	2.36	.89
10. I have a hard time getting started.	2.46	.96	2.25	.88
Positive Self-Esteem				
1. On the whole, I am satisfied with myself.	3.07	.73	3.02	.69
2. I feel that I have a number of good qualities.	3.38	.63	2.61	.67
3. I am able to do things as well as most other people.	3.22	.69	2.97	.70
4. I feel that I'm a person of worth, on an equal plane with others.	3.20	.70	2.01	.71
5. I take a positive attitude toward myself.	2.69	.94	2.98	.74

Table 7.2 (continued)

Item Means and Standard Deviations (SD) for Canadian and Thai Adolescents

	Canada		Thailand	
Items	Mean	SD	Mean	SD
Negative Self-Esteem				
1. At times, I think I am no good at all.	2.23	.94	2.67	.80
2.I feel I do not have much to be proud of	1.74	.79	2.30	.78
3. I certainly feel useless at times.	2.26	.93	2.39	.86
4. All in all, I am inclined to feel that I am a failure	1.58	.77	2.03	.82
Self-Efficacy				
1. I am confident I can understand the most difficulty material presented in the readings in most of my classes.	5.13	1.34	3.92	1.48
2. I am confident I can understand the basic concepts taught in most of my classes.	6.15	1.08	4.42	1.42
3. I am confident I can understand the most complex material presented by my teachers.	4.86	1.37	3.49	1.49
4. I am confident I can do an excellent job on the assignments and tests in my classes.	5.10	1.41	4.08	1.49
5. I am confident I can master the skills being taught in my classes.	5.35	1.27	3.89	1.43
Self-Efficacy for Self-Regulation Learning				
1. Finish assignments by deadlines?	5.44	1.42	4.42	1.56
2. Study when there are other interesting things to do?	3.77	1.61	3.88	1.63
3. Concentrate on your classes?	5.02	1.32	4.67	1.48
4. Take notes during class?	5.44	1.62	4.22	1.65
5. Use the library to get information for assignments?	4.26	1.94	3.43	1.59
6. Plan to do your homework/classwork?	4.87	1.71	4.31	1.57
7. Organize your homework/classwork?	5.01	1.74	4.21	1.54
8. Remember information presented in class and textbooks?	5.28	1.33	4.35	1.42

Table 7.2 (continued)

Item Means and Standard Deviations (SD) for Canadian and Thai Adolescents

	Canada		Thailand	
Items	Mean	SD	Mean	SD
Self-Efficacy for Self-Regulation Learning	4.33	1.78	4.25	1.65
9. Arrange a place to study without distractions?				
10. Motivate yourself to do homework/classwork?	4.64	1.48	4.56	1.58
11. Participate in class discussions?	5.02	1.82	4.58	1.63
Test Anxiety				
1. When I take a test I think about how poorly I am doing compared with other students.	3.41	2.03	4.10	1.85
2. When I take a test I think about items on other parts of the test I can't answer.	4.11	1.81	4.54	1.75
3. When I take tests I think of the consequences of failing.	3.95	2.22	4.51	1.85
4. I have an uneasy, upset feeling when I take an exam.	3.64	1.99	4.09	1.85
5. I feel my heart beating fast when I take an exam.	3.29	2.00	3.95	2.03

Table 8

Correlations among Procrastination and Motivation Variables

		Bivariate Correlation						
		1	2	3	4	5	6	7
1.	Procrastination	1	-.30**	.44**	-.26**	-.40**	.24**	-.13*
2.	SE Positive	-.33**	1	-.47**	.48**	.41**	-.14**	.20**
3.	SE Negative	.40**	-.70**	1	-.31**	-.31**	.33**	-.16**
4.	Self-efficacy	-.27**	.48**	-.38**	1	.69**	-.15**	.25**
5.	Self-efficacy for SRL	-.60**	.33**	-.27**	.52**	1	-.02	.32**
6.	Test Anxiety	.27**	-.30**	.35**	-.35**	-.12*	1	-.04
7.	GPA	-.24**	.23**	-.18**	.60**	.51**	-.17**	1

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

Note. Canadian Adolescents are below the diagonal. Thai Adolescents are above the diagonal.

Table 9

Path Coefficients of Motivation Variables Predicting Procrastination in the Hypothesized model

	Negative Self-Esteem			Self-Efficacy			SESRL			Test Anxiety			
	B	SE B	β	B	SE B	B	B	SE B	B	B	SE B	B	R^2
Canada	.27	.05	.31*	.24	.04	.54*	-.41	.04	-.89*	.12	.03	.27*	.61
Thailand	.27	.05	.30*	.24	.04	.53*	-.41	.04	-.87*	.12	.03	.27*	.59

Table 10.1

Path Coefficients of Motivation Variables Predicting Procrastination in the Adjusted models in the Follow-up Analysis

	Negative Self-Esteem			Self-Efficacy			Test Anxiety			R^2
	B	SE B	β	B	SE B	B	B	SE B	B	
Canada	.38	.05	.40*	-.24	.02	-.09*	.12	.03	.08	.27
Thailand	.38	.05	.49*	-.24	.02	-.11*	.12	.03	.10	.37

Table 10.2

Path Coefficients of Motivation Variables Predicting Procrastination in the Adjusted models in the Follow-up Analysis

	Negative Self-Esteem			SESRL			Test Anxiety			R^2
	B	SE B	β	B	SE B	β	B	SE B	β	
Canada	.24	.05	.27*	-.23	.03	-.50*	.07	.03	.14*	.46
Thailand	.24	.05	.28*	-.23	.03	-.50*	.17	.03	.15*	.49

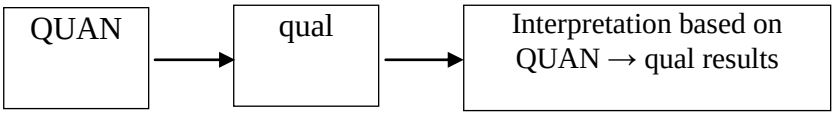

Figure 1. Explanatory Design (Creswell & Plano Clark, 2007, p.76)

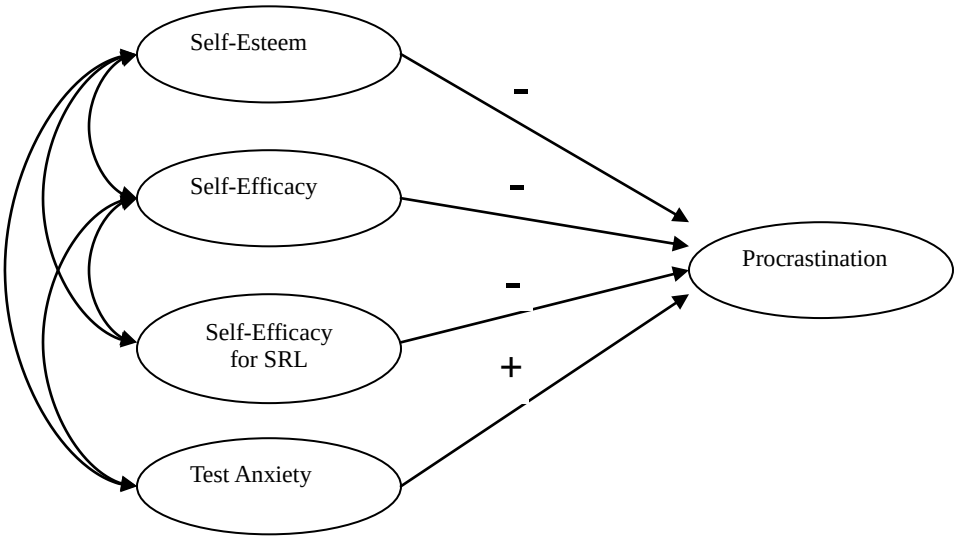

Figure 2. A representation of a SEM proposed model of the relationships among procrastination and motivation variables.

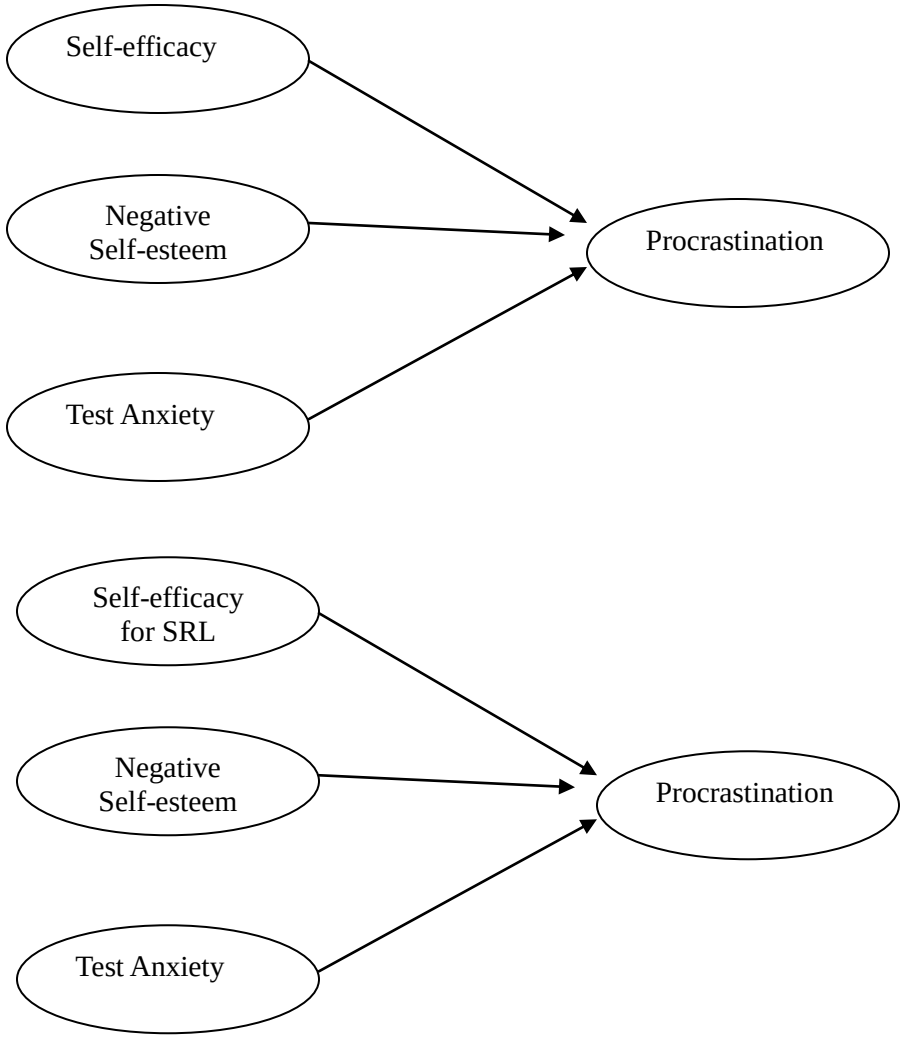

Figure 3. Adjusted models for Follow-up Analysis

APPENDIX A: ADOLESCENT MOTIVATION SURVEY

This question is designed to improve understanding about some of the things that influence students in their learning. Your answers to this survey are confidential.

Section A

1. What educational level are you in?	
2. What stream are you in?	
3. What is your age?	
4. Gender? (Circle one)	Female Male

Section B (Procrastination)
Please place an "x" in the box that best describes you

1	2	3	4
That's really not me...			That's me for sure

	1	2	3	4
1. I delay finishing jobs, even when they're important.				
2. I postpone starting on things I don't like to do.				
3. When I have a deadline, I wait till the last minute.				
4. I delay making tough decisions.				
5. I keep putting off improving my work habits.				
6. I manage to find an excuse for not doing something.				
7. I put the necessary time into boring tasks, like studying.				
8. I am a hopeless time waster.				
9. I am a time waster and I can't seem to do anything about it.				
10. When something's too tough to tackle, I postpone it.				
11. I promise myself I'll do something but then I don't do it.				
12. Whenever I make a plan of action, I follow it.				
13. Even though I hate myself if I don't get started, it doesn't get me going.				

14. I finish important jobs with time to spare.				
15. I have a hard time getting started.				
16. I try not to put things off until tomorrow.				

Section C (Self-esteem)
Please place an "x" in the box that best describes you

1	2	3	4
Strong Disagree	Disagree	Agree	Strongly Agree

	1	2	3	4
1. On the whole, I am satisfied with myself.				
2. At times, I think I am no good at all.				
3. I feel that I have a number of good qualities.				
4. I am able to do things as well as most other people.				
5. I feel I do not have much to be proud of.				
6. I certainly feel useless at times.				
7. I feel that I'm a person of worth, on an equal plane with others.				
8. I wish I could have more respect for myself.				
9. All in all, I am inclined to feel that I am a failure.				
10. I take a positive attitude toward myself.				

Section D (Self-efficacy and test anxiety)
Please place an "x" in the box that best describes you

1	2	3	4	5	6	7
Not at all true of me						Very true of me

	1	2	3	4	5	6	7
1. I am confident I can understand the most difficult material presented in the readings in most of my classes.							
2. I am confident I can understand the basic concepts taught in most of my classes.							
3. I am confident I can understand the most complex material presented by my teachers.							
4. I am confident I can do an excellent job on the assignments and tests in my classes.							
5. I am confident I can master the skills being taught in my classes.							
6. When I take a test I think about how poorly I am doing compared with other students.							
7. When I take a test I think about items on other parts of the test I can't answer.							
8. When I take tests I think of the consequences of failing.							
9. I have an uneasy, upset feeling when I take an exam.							
10. I feel my heart beating fast when I take an exam.							

Section E (Self-efficacy for self-regulated learning)
Please place an "x" in the box that best describes you

1	2	3	4	5	6	7
Not well at all						Very well

How well can you...

	1	2	3	4	5	6	7
1. Finish assignments by deadlines?							
2. Study when there are other interesting things to do?							
3. Concentrate on your classes?							
4. Take notes during class?							
5. Use the library to get information for assignments?							
6. Plan to do your homework/classwork?							
7. Organize your homework/classwork?							
8. Remember information presented in class and textbooks?							
9. Arrange a place to study without distractions?							
10. Motivate yourself to do homework/classwork?							
11. Participate in class discussions?							

APPENDIX B: SEMI-STRUCTURED INTERVIEW PROTOCOL

Question guide to obtain demographic information as well as to establish rapport

1. How old are you?
2. What grade are you in?
3. What do you think about schools?/Are you enjoying school?

Question guide to address procrastination

- What does “procrastination” mean to you?
- Are you regularly putting off your academic tasks (e.g., writing assignments, math homework, and studying for exams)?
- What kind of work or tasks that you mostly put off?
- When are you mostly to procrastinate?
- What causes you to procrastinate?

Question guide to address the impact of procrastination on students' life

- How does procrastination affect you?
    - How does it affect your performance?
    - How does it make you feel when you delay completing your assignments and/or studying for exams?

Question guide to address overcoming procrastination

- Do you think that you can overcome your procrastinating behavior? And How?

Question guide to address the role of self-efficacy and self-efficacy for self-regulated learning in procrastination

- How does your confidence to complete your class assignments influence

how much you procrastinate?

- How does your confidence to regulate your own study influence how much you procrastinate?

Question guide to address the role of self-esteem and test anxiety in procrastination

- Some people said that students put off academic tasks because they do not want their performance ability to be judged. Can this situation apply to you? Why do or do not you think so?
- Have you ever been anxious about specific tasks or taking specific exams? Can you tell me more about that? Does your academic or test anxiety affect how much you procrastinate on completing such tasks or studying for such exams? How?

Question guide to address the influence of cultural dimensions (i.e., individualism/collectivism) on achievement, motivation, and procrastination

- Can you please describe your relationships with your family, teachers, friends, etc?
    - Are you close to your family or extended family? How?
    - What is your relationship with your parents?
    - What is your relationship with teachers and friends?
    - How do you treat your parents, teachers and so on?
- What expectations (e.g., about your role in family, and at school) do parents have for you? How do such expectations influence your motivation and/or your learning behavior?

- How does your family view education and achievement?
- Is it important to you to do well in school? What is (are) the reason (s) for you to do well in school?
- How does your family view procrastination?

Invitation for additional comments

- That is all the questions I have for you. Is there anything you would like to add? Or is there anything that I have missed on the topics?

APPENDIX C: QUALITATIVE CODES

Characteristics of Adolescent Procrastination (P)	
Harmful P/Dysfunctional P	P that results in a negative outcome- Also references to procrastination in a negative way...but not necessarily a negative outcome
Helpful P/Functional P	P that results in a positive outcome…or references to procrastination in a positive way
Definitions	Not just in response to the direct questions, but also improvised during discussion
Subjects/Tasks	References to specific subjects or tasks
Non-academic P	Domains outside of schooling
Intention	References to respondents' intention to P
Antecedents of Procrastination	
Alternative Tasks	Things we do instead of what we should be doing
Patterns of P	Time: day, week, term, year-might be coded as Developmental aspects. Settings/Events/People that result in P
Causes of P	Triggers, mood state, grades, stress
Fear of Failure	References to consequences-failing courses, dropping out, fear of poor marks, fear of looking stupid, fear of making mistakes or of doing tasks wrong
Task Aversion	References to disliking tasks, difficult tasks
Task Interest	Reference to liking tasks, interesting tasks
Excuse Making	References to any excuses for procrastination or to using procrastination as an excuse for poor performance for example
Time Pressure	References to temporal aspects "I work better under pressure", "I leave it to the last minute", any reference to time
Workload	References to workload
Teacher Characteristics	Teachers' characteristics that affect adolescent procrastination
Lack of Knowledge/Skills	Procrastination as a result of lack of knowledge and skills to perform tasks
Consequences of Procrastination	
Performance	References to any academic outcomes or performance such as grades, quality of work as a result of procrastination- in a positive or negative way or both
Mood	References to mood state such as stress, dissatisfaction as a result of procrastination
Social Interaction	References to any reactions of others about one self's procrastination, e.g., my friends don't want to work with me

	Support Systems that Help Overcome Procrastination
Antidotes	Thoughts... ideas...verbal persuasions from...things that get you going but not necessarily strategies
Non-procrastination	Examples of avoiding procrastination...or times when the participant is motivated
Recommendations	Suggested ways of dealing with procrastination or what type of help could be developed to combat procrastination
Strategies	Plans organizations, behaviors that combat procrastination...also time management
	Motivation Variables (Self-Beliefs) and Procrastination
Self-Efficacy	Usually phrased as confidence in performing tasks
Self-Efficacy for SRL	Confidence in regulating ones' own learning, e.g., using learning strategies, time management, and/or effort management
Self-Worth	General self-esteem, feelings about ones worth, not self-efficacy, shame
Anxiety	References to anxiety in particular
Motivation	References to effort, persistence, desire, resilience (Reaction to Failure)
Goals	References to goal settings or to Mastery and Performance Goals
Affect-emotional reaction positive reactions	Participant's emotional reaction-anger hatred, or
	External Views of Procrastination
Developmental aspects	References to childhood
Other perspectives	References to others- especially their views of participant's procrastination
Peers	Respondents view of peers procrastination pattern or comparisons between themselves and peers
	Dimensions of Culture
Self-Definition	References to when respondents describe/talk about themselves
Relationship with others	Respondents describe their relationships with others
Individualism	References to any self-definition, goal structures, behaviors, needs or activities that fall into an individualist culture. For example, relationships with others, social behavior based on respondents' own attitudes.
Collectivism	References to any self-definition, goal structures, behaviors, needs or activities that fall into a collectivistic culture. For example, relationships with others—being in group; harmoniously live with a group; doing things together
Uncertainty Avoidance	References to social rules; how respondents think about the rules and/or respond to the rules

Power Distance	References to social hierarchy/social status or the way that people treat each other. For example, I obey them. I give them great respect.
	Culture, Motivation, Education, and Procrastination
Ability	References to ability or intelligence, for example, when respondents focus on being smart/intelligent
Effort	References to when respondents focus on effort, trying hard, or working hard
Expectation	Expectations that others such as parents, relatives, and teachers have for the respondents
Educational Opportunity	References to equal/unequal opportunity in education or educational/career choices
Achievement	References to when respondents mention achievement—how they and their family view achievement, either achievement in education or in other aspects. Also the reasons why they want to achieve.
Education	How respondents and their families view education and its importance. Also the reasons why they think it is or is not important.
Procrastination	How respondents and their families view procrastination- in a positive or negative way
Social/family impact	Social/family impact on motivation/learning/procrastination

APPENDIX D: EXCERPTS OF REFLEXIVE JOURNAL

May 15, 2010

While reading the articles, I was able to make notes about the topic. I used Microsoft Word for keeping track of my notes. This was especially helpful because I was later able to use the search function on the program to find particular thoughts or phrases. My main concern at the moment is that some of my participants seem unable to express their thoughts in great detail. I am uncertain if they were able to capture all of their ideas in words. I will need to read and reread my data carefully so that I can interpret the data appropriately.

May 19, 2010

I started to write up the results. I have consulted articles/dissertations for outlining my results. There are a couple ways to do this…1. Including quotes in the texts 2. Talking about the results and then showing quotes. I started out with the first one but it seems to me that this way of presenting the results is a little confusing for the reader. I decided that I would try to use the second method to see if the results were easier to understand for the reader. I have decided that this method appears more logical for my data. While writing the results, I had to move things around a couple of times because some of the subthemes could be put into more than one place. For example, I am not sure if intention should go into the definition section or should go into another main theme -antecedents.