Curr Psychol (2008) 27:135–144
DOI 10.1007/s12144-008-9028-8

Correlates of Academic Procrastination and Students' Grade Goals

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Published online: 29 April 2008

Abstract This study examined correlates of academic procrastination and students' grade goals in a sample of 226 undergraduates from Singapore. Findings indicated that self-efficacy for self-regulated learning was significantly and negatively related to procrastination. High self-efficacy for self-regulated learning also predicted students' expectations of doing well and low self-efficacy for self-regulated learning predicted students' expectations of not doing well academically. Additionally, help-seeking predicted students' expectations of doing well academically while academic stress predicted students' expectations of not doing well academically. Implications for education and educational practice were discussed.

Academic procrastination can be understood as the voluntary delay of the completion of an academic task within the expected or desired time frame despite expecting to be worse off for the delay (Senécal et al. 1995; Steel 2007). It can also be described as delaying the start of a task that one eventually intends to complete until he or she experiences emotional discomfort about not having performed the activity earlier (Lay and Schouwenburg 1993). Other researchers have explained procrastination as a deficit in self-regulated performance (Chu and Choi 2005; DeRoma et al. 2003). Academic procrastination can therefore be understood as a

This project was partially supported by the Undergraduate Research Experience on Campus (URECA) program from Nanyang Technological University, Singapore.

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type of "anti-motivation" wherein individuals decide not to move towards carrying out and finishing a chosen academic task. This behavior is common among adults as well as students in the high school and college levels (Wolters 2003). For example, 80%–95% of college students engage in procrastination (Ellis and Knaus 1977) and about 50% procrastinate in a consistent and problematic fashion (Day et al. 2000). Academic procrastination has been found most widespread when writing term papers, studying for examinations, and completing weekly assignments (Solomon and Rothblum 1984), and such behavior results in detrimental academic performance (e.g. poor grades and course withdrawal) and increased health risks such as depression and anxiety (Semb et al. 1979; Solomon and Rothblum 1984).

It is not surprising that procrastination is closely related to motivation variables such as self-efficacy for self-regulated learning; some researchers have conceptualized procrastination as a form of self-regulatory failure (Chu and Choi 2005; Steel 2007). Individuals who posses self-efficacy for self-regulated learning know how to direct their learning processes by setting appropriate goals for themselves, apply apt strategies to attain their goals and enlist self-regulative influences that motivate and guide their efforts (Zimmerman et al. 1992). Moreover, according to Zimmerman (1989, 1990), self-regulated learners display a high sense of self-efficacy in their capabilities, which influences the knowledge and skill goals they set for themselves and their commitment to fulfill these challenges. In contrast, non self-regulated learners might display low task persistence, effort and interest, which resemble behavioral characteristics of procrastination. In his research, Wolters (2003) sought to understand academic procrastination from a self-regulated learning perspective. In a series of two studies using undergraduate samples, he found that procrastination was strongly and negatively related to self-efficacy, and to a lesser extent, the use of metacognitive strategies (Wolters 2003). Zimmerman et al. (1992) also found self-efficacy for self-regulated learning to be significantly correlated with students' grade goals (r=.30, p<.05). Zimmerman et al.'s (1992) finding was in line with previous research studies: the higher the perceived self-efficacy, the higher the goals students set for themselves (Bandura and Wood 1989; Locke and Latham 1990). Collectively, there appears to be consistent empirical evidence suggesting a negative correlation between self-efficacy for self-regulated learning and procrastination.

Test anxiety is another variable that may be related to procrastination. Some researchers studying test anxiety suggested that high-anxious children are not persistent or avoid difficult tasks, manifesting behavioral characteristics similar to that of procrastination (Hill and Wigfield 1984). There is some empirical evidence to suggest that students who viewed a task as aversive or who expressed greater levels of anxiety or fear of failing a task showed a higher incidence of procrastination (Clark and Hill 1994; Lay 1994; Solomon and Rothblum 1984). Other researchers argue that test anxiety might be related to perceptions of competence instead (Nicholls 1976). In a similar vein, Benjamin et al. (1981) concluded that although high anxious students seemed to put in as much effort as low-anxious students, they appeared to be very ineffective and inefficient learners who often did not use suitable cognitive strategies for achievement. In addition, higher levels of test anxiety were related to lower levels of test and quiz performances, as well as grades (Pintrich and De Groot 1990). Taken together, while there is some research linking test anxiety to procrastination, empirical evidence is not conclusive at this point.

In a discourse on procrastination within an academic context, academic achievement will invariably be discussed. Asian students appear to be scoring above international averages on comprehensive international assessments such as Trends in International Mathematics and Science Study (TIMSS, Kelly et al. 2000). While Asian students' consistently high achievement patterns have been well documented (Sue and Okazaki 1990), higher academic stress levels and associated mental health concerns among Asian students have also been reported. In a review of the literature in the area of academic stress, there appears to be two main sources of academic stress affecting Asian students: academic stress arising from self expectations and academic stress arising from expectations of others such as parents and teachers (Ang and Huan 2006; Wong et al. 2005). Given that test anxiety and social anxiety have been shown to have links with procrastination, it is plausible that stress arising from expectations might also be similarly associated with procrastination although this has not been specifically explored. Interestingly, in a large scale survey conducted in Singapore, Ho and Yip (2003) found that a majority of students ranked education as the greatest stressor of their lives, with examination grades ranked as the most important aspect of school life but also the aspect they reported to be least satisfied with. This suggests that while grades were regarded with high importance, the students perceived that they could not attain the standards that they deemed to be satisfactory.

Another variable that may be related to procrastination is help-seeking. Looking for assistance and support from teachers and peers is a vital instrumental act in the achievement domains of school and work (Karabenick 2003; Karabenick and Knapp 1988). A learner who engages in help-seeking shows awareness of difficulty he or she cannot overcome alone, and remedies that difficulty by seeking help from peers or instructors when needed. According to Pintrich et al. (1993), help-seeking is considered an adaptive resource management strategy and believed to be used by learners who are motivated. A large body of research indicates that help-seeking is a characteristic of students capable of monitoring and evaluating what they learn (Ablard and Lipscultz 1998; Zimmerman and Martinez-Pons 1990). Knowledge monitoring reflects an active, instrumental approach to learning, and therefore it is expected that students who use knowledge monitoring strategies effectively will be more likely to seek academic help when necessary.

While much has been studied about procrastination in adults and undergraduates across academic and nonacademic contexts, and across individuals in the United States, United Kingdom, and Australia (Ferrari et al. 2005; Ferrari and Scher 2000; Lee 2005), there is surprisingly little research exploring this subject in an Asian context. It is equally important to explore the correlates of procrastination, that is, to establish its nomological net across countries and contexts. The present study seeks to examine two related research questions. We were interested in examining the relationship between several motivational and learning strategies variables and academic procrastination, as well as the relationship between these same variables and undergraduates' grade goals or expectations regarding their grade for a common course at the end of the academic year. Specifically, we expected self-efficacy for self-regulated learning to be negatively related to procrastination. We expected test anxiety and academic stress to be positively related and help-seeking to be negatively related to procrastination, although the research base supporting these predictions is relatively

sparse at present. Likewise, we expected self-efficacy for self-regulated learning to be positively related to undergraduates' expectations of doing well at the end of the academic year, and that self-efficacy for self-regulated learning would be negatively related to undergraduates' expectations of not doing well at the end of the academic year. We expected help-seeking to be positively related to undergraduates' expectations of doing well academically, while test anxiety and academic stress would be negatively related to undergraduates' expectations of not doing well academically.

Materials and Methods

Participants, Consent and Procedure

Participants were 226 undergraduate students (54 males and 172 females) pursuing a major in Education from National Institute of Education, Nanyang Technological University in Singapore. The mean age of the undergraduate students was 21.07 years (SD=2.43). Participation rate was approximately 90%.

The purpose of the study was explained to the participants and consent to participate in the study was obtained from all the participants involved. The participants took part in this study on a voluntary basis. Participants' responses were anonymous. Questionnaires were administered to participants in an organized classroom setting. All questionnaires were administrated in English and no translation was needed as English is the medium of instruction for all schools and universities in Singapore.

Measures

Procrastination Scale (PS) The 16-item Procrastination Scale (Tuckman 1991) measures procrastination tendencies in students. Participants rated items on a Likert scale from 1 (*That's really not me*) to 4 (*That's me for sure*). Sample items include "I postpone starting on things I don't like to do" and "When I have a deadline, I wait till the last minute". In the present sample, the Cronbach alpha reliability estimate for PS was 0.85.

Self-Efficacy for Self-Regulated Learning Scale (SESRLS) The 11-item scale (Zimmerman et al. 1992) was used to measure students' efficacy for self-regulated learning, defined as students' perceived capability to use self-regulated learning strategies such as planning and organizing their academic activities, using cognitive strategies to understand and remember materials taught, resisting distractions, participating in class, and structuring their environment so as to make it conducive to study. The items on this scale were scored on a 7-point Likert Scale, from 1 (*Not well at all*) to 7 (*Very well*). Sample items include "How well can you finish homework assignments by deadlines?" and "How well can you study when there are other interesting things to do?" In the present sample, the Cronbach alpha reliability estimate for SESRLS was 0.89.

Motivated Strategies for Learning Questionnaire-Test Anxiety scale (MSLQ-Test Anxiety) The 5-item MSLQ-Test Anxiety scale (Pintrich et al. 1993) was used to

measure students' worry and concern over taking exams. The items on this subscale of MSLQ were scored on a 7-point Likert Scale, from 1 (*Not true of me*) to 7 (*Very true of me*). Sample items include "When I take a test I think about items on other parts of the test I can't answer" and "When I take tests I think of the consequences of failing." In the present sample, the Cronbach alpha reliability estimate for MSLQ-Test Anxiety was 0.78.

Academic Expectations Stress Inventory (AESI) The 9-item AESI (Ang and Huan 2006) was used to measure academic stress arising from expectations of parents/teachers and expectations of self. Although two subscale scores can be obtained, this study used only the total score. Each item was rated on a 5-point Likert scale ranging from 1 (*Never True*) to 5 (*Almost Always True*). Sample items include "I feel I have disappointed my parents when I do poorly in school" and "I feel stressed when I don't live up to my own standards." In the present sample, the Cronbach alpha reliability estimate for AESI was 0.87.

Motivated Strategies for Learning Questionnaire-Help-Seeking (MSLQ-Help-Seeking) The 4-item MSLQ-Help-Seeking scale (Pintrich et al. 1993) was used to measure help-seeking tendencies in students. The items on this subscale of MSLQ were scored on a 7-point Likert Scale, from 1 (*Not true of me*) to 7 (*Very true of me*). Sample items include "I ask the instructor to clarify concepts I don't understand well" and "I try to identify students in my classes whom I can ask for help if necessary." In the present sample, the Cronbach alpha reliability estimate for MSLQ-Help-Seeking was 0.63.

Expected Grade We asked the undergraduates to state their academic grade goals, defined as one's expected grade at the end of the academic year. Students were free to write a letter grade ranging from A to F for a common foundational course required of all Education majors. We used this procedure to obtain students' expected grade which was similar to the procedure used in Zimmerman et al.'s (1992) study. Of 226 undergraduates, 14.2% expected to obtain a grade of A, 68.6% expected to obtain a grade of B, and 7.5% expected to obtain a grade of C, with 9.7% of the participants choosing not to provide a response for this question. All undergraduates expected to pass the course with no student expecting a grade lower than a C. We were interested to examine whether certain motivational and learning strategies variables were significantly related to undergraduates' expectations of doing well or not doing well at the end of the academic year. Therefore, for the purposes of the present study, an expectation of obtaining a grade of A was operationalized as an expectation of doing well academically, while an expectation of obtaining a grade of C was operationalized as an expectation of not doing well academically.

Results

A standard multiple regression analysis was performed to examine our first research question and its associated hypotheses, specifically, to investigate whether

motivational and learning strategies variables such as self-efficacy for self-regulated learning, test anxiety, academic stress, and help-seeking were significantly associated with procrastination. The predictors as a set accounted for 44.5% of the variance in procrastination scores, F (4, 210)=42.12, $p<.05$. As expected, self-efficacy for self-regulated learning was a significant predictor of procrastination ($\beta=-.68$, $p<.05$); specifically, self-efficacy for self-regulated learning and procrastination have a strong and inverse relationship whereby lower levels of self-efficacy for self-regulated learning was associated with higher levels of procrastination (see Table 1).

Two sets of binary logistic regression analyses were performed to examine our second research question and associated hypotheses using outcome variables of an expectation of obtaining a grade of A and an expectation of obtaining a grade of C, respectively. In the first logistic regression analysis, a test of the full model with self-efficacy for self-regulated learning, test anxiety, academic stress, and help-seeking as possible predictors, against a constant-only model was statistically significant, χ^2 (4, N=226)=34.34, $p<.05$, and this indicated that the predictors as a set could reliably predict an expectation of obtaining a grade of A. The variance accounted for by the set of predictors was approximately 27% (Nagelkerke $R^2=.27$) and the prediction model accurately classified 84.5% of all the cases. Examination of individual predictors indicated that two out of four predictors reliably predicted the outcome of the expectation of obtaining a grade of A. The two statistically significant predictors were self-efficacy for self-regulated learning (Wald statistic=15.11, $p<.05$, odds ratio=3.46, CI for odds ratio=1.85; 6.46) and help-seeking (Wald statistic=4.98, $p<.05$, odds ratio=1.70, CI for odds ratio=1.07; 2.71). The odds of an outcome of obtaining a grade of A are 246% higher with every 1-unit increase in self-efficacy for self-regulated learning, and 70% higher with every 1-unit increase in help-seeking.

In the second logistic analysis, a test of the full model with self-efficacy for self-regulated learning, test anxiety, academic stress, and help-seeking as possible predictors, against a constant-only model was statistically significant, χ^2 (4, N=226)=11.86, $p<.05$, and this indicated that the predictors as a set could reliably predict an expectation of obtaining a grade of C. The variance accounted for by the set of predictors was approximately 13% (Nagelkerke $R^2=.13$) and the prediction model accurately classified 91.5% of all the cases. Examination of individual predictors indicated that two out of four predictors reliably predicted the outcome of the expectation of obtaining a grade of C. The two statistically significant predictors were self-efficacy for self-regulated learning (Wald statistic=4.78, $p<.05$, odds ratio=0.55, CI for odds ratio=0.32; 0.94) and academic stress (Wald statistic=6.52, $p<.05$, odds ratio=2.30, CI for

Table 1 Relations between motivational and learning strategies variables, and procrastination

	Criterion: procrastination			
Predictors	B	*SE*B	β	*t*
Self-efficacy for self-regulated learning	−.48	.04	−.68	−12.08*
Test anxiety	.01	.06	.01	0.21
Academic stress	.10	.06	.10	1.71
Help−seeking	.08	.10	.05	0.83

*$p<.05$

odds ratio=1.21; 4.34). A 1-unit increase in self-efficacy for self-regulated learning reduces the odds of an outcome of obtaining a grade of C by 45%. In other words, the lower an individual's self-efficacy for self-regulated learning, the higher the chance of obtaining a grade of C. With respect to academic stress, the odds of an outcome of obtaining a grade of C are 130% higher with every 1-unit increase in academic stress.

Discussion

This study examined the relationship between several motivational and learning strategies variables and academic procrastination, as well as the relationship between these same variables and undergraduates' expectations regarding their grade for a common course at the end of the academic year. Findings from multiple regression analysis indicated that self-efficacy for self-regulated learning was strongly and negatively related to procrastination. Test anxiety, academic stress and help-seeking did not emerge as statistically significant predictors of procrastination. Results from logistic regression analyses indicated that self-efficacy for self-regulated learning was a significant predictor for both undergraduates' expectation of getting a grade of A as well as their expectation of getting a grade of C. Specifically, high self-efficacy for self-regulated learning predicted expectations of doing well academically and low self-efficacy for self-regulated learning predicted expectations of not doing well academically. In addition, help-seeking predicted undergraduates' expectation of getting a grade of A while academic stress predicted undergraduates' expectation of getting a grade of C.

In line with previous research, self-efficacy for self-regulated learning has emerged as the variable that was strongly and consistently related to procrastination and students' grade goals or expectations (e.g., Bandura and Wood 1989; Locke and Latham 1990; Zimmerman et al. 1992). Students who perceive themselves as capable of regulating and structuring their own learning (or self-regulated learners) would engage in procrastination to a much lesser extent than other students. Previous research has also linked perceived self-efficacy to students' effort and persistence while engaged in academic tasks, and to their class performance (Bandura 1997; Pajares 1996). Additionally, past work has shown that students who exhibit a more superficial engagement in academic work and who are less persistent may get lower grades compared to other students (Meece and Holt 1993; Urdan 1997). Wolters (2003) aptly summarized these findings by providing three reasons why students who have self-efficacy for self-regulated learning would be able to effectively harness their knowledge and manage their learning. First, these individuals possess knowledge concerning cognitive strategies, and when used appropriately, increase and enhance students' learning. Second, these individuals possess metacognitive skills and can effectively monitor and control important aspects of their learning behavior. Third, these individuals exhibit adaptive motivational beliefs and attitudes and an orientation toward mastery goals.

Findings from the present study also showed that help-seeking predicts students' expectation of getting a grade of A. When students show adaptive help-seeking, they are aware that they are facing difficulties in their work which cannot be overcome independently. Thus, help-seeking appears to be indicative that students take an active role in their own learning by requesting assistance from their peers or

instructors when necessary. Research has found that help-seeking can maintain task involvement, ward off possible failure, and in due course, optimize students' chances for mastery and autonomy (Newman 2000). With good control of their own learning process, students might have the confidence to predict doing well academically. Previous episodes of success after assistance might also contribute to students having greater confidence in predicting that they would obtain a good grade at the end of the academic year. Collectively, both self-efficacy for self-regulated learning and help-seeking conjointly predicted students' expectation of doing well academically. As Pintrich and De Groot (1990) reasoned, these individuals are interested in the value of the tasks they work on in their classrooms, and in placing great importance and value in their work, they would expect to do well in it.

On the other hand, academic stress predicted students' expectation of getting a grade of C. It is plausible that students who struggle with academic stress related issues perceive that they are unable to do well academically. Put differently, academic stress may affect students' perception of their grade goals or expectations. For example, results from international assessments have indicated that students in Japan report more often that they were not doing well in mathematics despite scoring well on achievement tests (Leong 2002). Likewise, in Singapore, while examination grades were reported to be the most important aspect of school, it was also the one aspect about school that students reported that they were least satisfied with (Ho and Yip 2003). Furthermore, the association between academic stress and physical and mental health has been well documented. For example, in Korea, graduating from a high ranking university is a passport to a good job, high wages, and high social status (Chung et al. 1993), hence Korean students spend large amounts of time studying after school and on weekends, and leisure was comparatively rare. Hence it was not surprising that Juon et al. (1994) found academic stress to be one of the predictors of suicidal behaviors among Korean adolescents. In addition, Haines et al. (1996) found that mental and physical health problems are associated with poorer academic outcomes (e.g. grade point averages, retention).

Collectively, findings from this study have implications for education and educational practice. Interventions designed to assist struggling learners and specifically to decrease procrastination, would benefit from maintaining a primary focus on developing self-efficacy for self-regulated learning. Instead of attempting to increase self-efficacy per se, interventions could focus on adaptive motivational attitudes and beliefs, and cognitive and metacognitive strategies that help the learner to plan, monitor, manage and enhance learning. Adaptive help-seeking and effective management of academic stress within the educational context would also be helpful for the learner.

Some limitations of the study warrant comment. This study is correlational and cross-sectional in nature, and we did not seek to establish causal relations between the variables. For example, the design of the current study does not allow us to determine if procrastination should be viewed as a consequence of or an influence on self-efficacy for self-regulated learning. Therefore caution needs to be exercised in drawing conclusions from the study pertaining to causality and directionality. Also, this study relied on data obtained from self-reports. In particular, procrastination focused on students' self-reports of their tendency to postpone getting started on tasks. Ferrari and colleagues (Ferrari 1994; Harriott and Ferrari 1996) highlighted the

distinction between decisional and behavioral forms of procrastination. Future studies could include behavioral indicators of procrastination so as to explore in a more comprehensive manner the relationship between motivational and learning strategies variables and procrastination. Finally, the present study used a sample of undergraduates and it would be helpful for further research to establish the generalizability of these findings to other student populations.

These limitations notwithstanding, this paper extends previous research and contributes to the existing literature base on the relationship between motivational and learning strategies variables and academic procrastination, as well as the relationship between these variables and undergraduates' grade goals. There are limited published research studies in this topic area using Asian samples and the present study fills this specific gap, providing some insight into understanding correlates of academic procrastination and students' grade goals.

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