

## **Attribution as a Predictor of Procrastination in Online Graduate Students**

**Glenda C. Rakes**

*The University of Tennessee at Martin*

**Karee E. Dunn**

*The University of Arkansas*

**Thomas A. Rakes**

*The University of Tennessee at Martin*

---

### **Abstract**

Online courses are growing at a tremendous rate, and although we have discovered a great deal about teaching and learning in the online environment, there is much left to learn. One variable that needs to be explored further is procrastination in online coursework. In this mixed methods study, quantitative methods were utilized to evaluate the influence of online graduate students' attributions for academic outcomes to ability, effort, context, and luck on their tendency to procrastinate. Additionally, qualitative methods were utilized to explore students' attributional beliefs about their tendency to procrastinate in their online coursework. Collectively, results indicated that ability, effort, context, and luck influenced procrastination in this sample of graduate students. A discussion of these findings, implications for instructors, and recommendations for future research ensues.

---

Online course offerings and degree programs have recently increased at a rapid rate and have gained in popularity among students (Allen & Seaman, 2010, 2011). Garrett (2007) reported that half of prospective students surveyed about postsecondary programs expressed a preference for online and hybrid programs, typically because of the flexibility and convenience (Daymont, Blau, & Campbell, 2011). Advances in learning management systems such as Blackboard have facilitated the dramatic increase in asynchronous programs. Although the research literature concerning online learning has blossomed over the past decade, much is left to learn about important variables that impact student learning and achievement. The purpose of this mixed methods study was to better understand the relationship between online graduate students' attributional beliefs and their tendency to procrastinate. The approach to this objective was twofold. First, quantitative methods were utilized to evaluate the influence of students' attributions for academic outcomes to ability, effort, context, and luck on their tendency to procrastinate. Second, qualitative methods were utilized to explore students' attributional beliefs about their tendency to procrastinate in their online coursework.

There is evidence that procrastination is harmful to student success and may be difficult to change (Wohl, Pychyl, & Bennett, 2010). Understanding students' explanation for behavior such as procrastination may be important to improving learning outcomes. According to Zimmerman's (1989) cyclical model of self-regulation, a continuation of this maladaptive attributional thinking will likely result in further procrastination as students may fail to engage in proactive learning strategies (Cleary & Zimmerman, 2004; Dunn, Osborne, & Link, 2012; Zimmerman, 1989). A better understanding of attributional thinking and procrastination in online learners may help instructors to mitigate this potentially negative influence on the quality and quantity of students' work.

## Literature Review

Social cognitive theory served as the theoretical framework to explore these issues in this study. More specifically, Zimmerman's (1989) three-phase cyclical model of self-regulation provides theoretical support for the influence of students' attributional thinking on future self-regulation or future self-regulation failures such as procrastination. The first phase of Zimmerman's cyclical model is forethought. This phase precedes actual action, but sets the stage for learning. The second and third phases, performance control and self-reflection respectively, serve as the foci of this study. In the performance control phase, the learner actively engages or fails to engage in strategic processes that drive attention and action. In the self-reflection phase the learner interprets learning outcomes as well as their efforts. Because Zimmerman's model is cyclical, the events of each phase influence subsequent phases. From this perspective, understanding the effect of attributional (self-reflection phase) on procrastination (performance control phase) may help faculty better understand and treat the problem of student procrastination. Attributional beliefs are important because they influence the interpretation of and response to the learning experience, which then inform future self-regulatory behaviors and learning (Cleary & Zimmerman, 2004).

The attributions students make in online environments may be even more important as self-regulation is more critical in online courses because the bulk of the responsibility for learning lies with the student. Without regular classroom appearances, opportunities for self-regulation failure or procrastination increase (Humphrey & Harbin, 2010; Klingsieck, Fries, Horz, & Hofer, 2012). Given the characteristics of asynchronous online learning, it is important to examine student attributions for self-regulation failure in the form of procrastination. A review of literature regarding academic procrastination, attribution, and the relationship between the two constructs follows.

### Procrastination

Academic procrastination is defined as the intentional and needless deferral or delay of work that must be completed to the point of experiencing discomfort (Schraw, Watkins, & Olafson, 2007; Solomon & Rothblum, 1984). A few students use procrastination as an active, strategic behavior (Chu & Choi, 2005; Corkin, Yu, & Lindt, 2011; Steel, 2007); however, the present study uses the most common definition of the term procrastination to refer to the passive, needless delay of work on any academic task. In Zimmerman's model, procrastination falls in the performance control phase, and has been described as the quintessential failure of self-regulation (Steel, 2007).

Procrastination is often detrimental to academic achievement because it reduces both the quality and amount of work produced by a student. It leads to a number of other negative results, including stress, isolation, and poor performance (Zacharis, 2009). Students who procrastinate tend to express dissatisfaction with their courses (McCown & Johnson, 1991) and receive lower grades than low-procrastinators (Rothblum, Solomon, & Murakami, 1986; Tice & Baumeister, 1997). In spite of these negative consequences, it is estimated that 80 to 95 percent of college students engage in this behavior (Ellis & Knaus, 1977; O'Brien, 2002).

Onwuegbuzie's (2004) research suggests that this problem may be even more serious in graduate studies. Some research on undergraduate students indicates that for many students, the temptation to procrastinate may be particularly strong in the online learning environment (Elvers, Polzella, & Graetz, 2003; Michinov, Brunot, LeBohec, Juhel, & Delaval, 2011; Romano, Wallace, Helmick, Carey, & Adkins, 2005; Tuckman, 2005, 2007; Zacharis, 2009). Michinov et al. (2011) identified two primary causes of failures in online courses—time management and procrastination.

In traditional courses, students are forced to focus regularly on class materials through class attendance. The absence of such a structured physical classroom experience may increase the temptation to procrastinate. Only a small body of literature has begun to explore the role of procrastination in online graduate students and what variables influence procrastination in online coursework. Collectively, this literature indicates that additional research is needed in this area as graduate students may be more likely to procrastinate than undergraduate students and online learning environments provide more opportunity for procrastination.

### **Attribution**

Attributions for academic outcomes are assigned at the end of a self-regulatory cycle in the self-reflection phase of Zimmerman's (1989) model. However, these attributions are critical as they influence the subsequent self-regulatory cycle. Maladaptive attributions will decrease self-regulatory activity and increase the tendency to procrastinate (Dunn et al., 2012; Weiner, 1986). This theoretical connection to procrastination makes the understanding of attribution critical to the understanding of why students procrastinate.

An essential assumption of attribution theory is that learners attempt to understand and explain the causes of their behaviors in such a way as to maintain a positive self-image. These explanations are focused on either internal (ability, effort) factors or external causes (luck, context). Internal and external factors may be viewed by an individual as either controllable or uncontrollable. Student attributions for academic outcomes can determine a student's level of motivation and influence subsequent behavior based on whether the cause is viewed as changeable and within the individual's control (Weiner, 1986).

Weiner (1972, 1974) articulated a theory of attribution that is currently used as a basis for much research in this area, including the current study. Weiner's (1985, 1994, 2000, 2006) theory describes a timeline that starts with an individual's determination of a behavioral outcome as a success or failure. The individual subsequently experiences positive or negative feelings as a result of his or her interpretation of the consequences of the behavior. Finally, the individual attempts to understand and explain why the outcome occurred (Graham & Williams, 2009).

Individuals may attribute these perceived successes or failures to things such as ability, effort, context, luck, or mood (Hamilton & Akhter, 2002; Lefcourt, Von Baeyer, Ware, & Cox, 1979). These perceived causal determinants of outcomes fall within three dimensions—locus, stability, and control (Weiner, 1994, 2000; Weiner & Graham, 1989) (see Table 1). For example,

luck is external (locus), unstable (stability), and uncontrollable (controllability). These types of attributions impact how individuals cognitively, affectively, and behaviorally respond in future situations (Weiner, 1994).

Table 1  
*Causal determinants of outcomes*

Dimension	Attributional Quality	
Locus	Internal	Factors that originate within the individual
	External	Factors that originate from the environment
Stability	Stable	Individual believes the outcome is likely to be identical if same behavior occurs in the future
	Unstable	Individual believes that the outcome is likely to be different if same behavior occurs in the future
Controllability	Controllable	Individual believes the factor can be altered
	Uncontrollable	Individual does not believe the factor can be easily altered

Typically, individuals attribute successes to internal factors and blame failures on external reasons. This tendency is known as the hedonistic or self-serving bias (Brownlow & Reasinger, 2000; McClure et al., 2011; Miller & Ross, 1975). This bias is not always negative. In fact, research indicates that attributing successes to effort and failure to teachers has been found to predict higher academic achievement (McClure et al., 2011). However, research by McClure and his colleagues (2011) also highlights how the hedonistic bias negatively impacts learning. They found that attributing academic failures to contextual factors, such as family or friends, predicted lower academic performance. Because many students who enroll in online courses are working adults with families (Patton, 2012; Shachar & Neumann, 2010), it is important to better understand their attributional beliefs regarding their learning outcomes and how those beliefs impact their online behaviors and learning in online courses.

### **Attribution and Procrastination**

The impact of attributional beliefs on academic performance is moderated by the influence of motivation levels and subsequent engagement in self-regulation of learning (Cleary & Zimmerman, 2004; Zimmerman, 1989) or procrastination, which has been equated to self-regulation failure (Steel, 2007). If a learner believes that the cause of a perceived failure is stable and uncontrollable, this attributional pattern creates a fear of failure that breeds more failure (Harvey & Martinko, 2010; Weiner, 1985) and likely facilitates future procrastination. Solomon and Rothblum's (1984) seminal work supports the theoretical assumption that fear of failure perpetuates procrastination. Students whose attributions are made to external, uncontrollable factors are more likely to be unsuccessful at academic tasks and, based on theory and research on traditional classrooms, more likely to procrastinate in the future.

Fortunately, attributional beliefs may be improved through training. In fact, attribution training that occurs in a single presentation can significantly improve attributional beliefs and subsequently learning outcomes (Doctor, 2004; Wilson & Linville, 1982, 1985). The malleable nature of attributional beliefs, the theoretical link between attributions and procrastination, and a small body of literature that connects the two constructs supports the need to further explore the influence of attributional beliefs on procrastination in online graduate students.

Previous research indicates attributional thinking and beliefs influence procrastination in undergraduate students in face-to-face class settings. For example, Dunn and her colleagues (2012) found that undergraduate nursing students enrolled in a pathophysiology course were more likely to procrastinate if they attributed academic outcomes to ability and effort. In another study, Rothblum et al. (1986) highlighted the link between procrastination and attributional or explanatory style. Undergraduate students in their study who were high procrastinators often attributed success on exams to external and unstable factors that if untreated, could lead to future procrastination. Brownlow and Reasinger (2000) reached similar conclusions. They found that high undergraduate academic procrastinators made external attributions for their successes, believing they do little to contribute to their own academic achievements. Low procrastinators in this study made more effort-based attributions to explain their success. In the studies conducted by Rothblum et al. (1986) and by Brownlow and Reasinger (2000), the researchers examined procrastination in terms of how students with the tendency to procrastinate attribute their successes rather than examining student attributions for the specific self-regulation failure of procrastination.

Two studies have more recently examined the relationship between attribution and academic procrastination. Gargari, Sabouri, and Norzad (2011) found that causal attributions are important in understanding procrastination among undergraduate students enrolled in traditional courses. Specifically, they found that students who blamed their failures on stable factors such as aptitude and capability engaged in more procrastination behaviors. They also found that students who attributed academic success to internal factors (e.g., ability) showed a lower degree of procrastination and those associating their negative academic results with internal factors demonstrated a higher degree of procrastination in completing assignments. Similarly, Hoppe (2011) found that undergraduate students in face-to-face classes who procrastinate on academic assignments have a greater tendency to use a negative explanatory style through which they attribute events to internal, stable causes. She asserted that students with a negative explanatory style tend to postpone assignments longer and perform more poorly on assignments while creating unnecessary stress. Collectively, this body of research suggests that attributional beliefs and procrastination are related; however, there is a dearth of research on this topic in online graduate students. Thus, the present study seeks to extend the work of Gargari et al. (2011) and Hoppe (2011) by examining graduate student attributions for the particular self-regulation failure of procrastination in an online class.

### **The Present Study**

The current research was guided by two primary questions: 1) Are online graduate students' attributional style predictive of the prevalence of student procrastination? 2) To what do online graduate students attribute procrastination in online courses? If attributions influence online students' tendency to procrastinate, online faculty could avail themselves of means to impact the tendency to procrastinate by specifically addressing attributional beliefs in course support materials.

## Methodology

### Sample

The convenience sample for this study consisted of 139 fully admitted graduate students enrolled in an accredited online program in education at two regionally accredited universities. One was a mid-southern university that grants bachelors and masters degrees. The second was a large mid-western research university that grants bachelors, masters, and doctoral degrees. The sample was primarily female (87%). The age of the participants ranged from 18 to 58 ( $M = 35$ ;  $SD = 9.7$ ).

### Procedures

All instruments were prepared for presentation and data collection on the Internet. No identifying information was collected. All responses were voluntary and anonymous. Participants were invited to participate via email and asked to complete the questionnaires.

### Measures

Two measures were used for this study. The Multidimensional-Multiattributional Causality Scale (MMCS) (Lefcourt, 1981) assessed participant's attributional beliefs. The Procrastination Assessment Scale-Students (PASS) (Solomon & Rothblum, 1984) assessed passive procrastination. A set of open response questions regarding attributions for procrastination was also used.

**Multidimensional-Multiattributional Causality Scale.** The MMCS (Lefcourt, 1981) was developed to assess attributional style and goal specific locus of control for affiliation and achievement. The MMCS delineates two basic attributional styles: internal and external. It also distinguishes whether internal attributions are made to effort or ability and whether external attributions are made to luck or situational context. Because this study focused on academic behaviors, only the 24 items from the achievement scales were used.

Lefcourt and his colleagues (1979) first validated this measure over thirty years ago. The MMCS was originally validated on 240 undergraduate students. Lefcourt et al.'s (1979) factor analyses confirmed the structure of the scale. Analysis of internal consistency of the full Achievement scale provided a Cronbach's alpha of .61, which exceeds Nunnally's (1978) suggested cutoff criterion. In the current study, the Cronbach's alphas affirmed the internal reliability of the MMCS Achievement subscales, Ability (.64), Effort (.65), Context (.69), and Luck (.81).

The Achievement scale consists of four subscales with six items each: Ability and Effort (internal attributions) and Context and Luck (external attributions). Participants responded to the 24 items using a 5-point Likert scale (0 = "Strongly Disagree" to 4 = "Strongly Agree"). The measure contains an equal number of questions that attributions to ability, effort, luck, and context. Items also include an equal number of success and failure-based statements such as "If I were to receive low marks it would cause me to question my academic ability." and "In my case, the good grades I receive are always the direct result of my efforts." To calculate the score for each scale the scores were summed and a mean was calculated. Higher scores indicate a higher endorsement of the attributional belief (Brownlow & Reasinger, 2000; Lefcourt, et al., 1979).

**Procrastination Assessment Scale-Students.** The Procrastination Assessment Scale-Students (PASS) (Solomon & Rothblum, 1984) is frequently used to measure academic procrastination (Ferrari, Johnson, & McCown, 1995). It contains 44-items designed to measure

the reasons for academic procrastination and the prevalence of procrastination. The authors (Solomon & Rothblum, 1984) define procrastination as a passive act of procrastination, specifically as “the act of needlessly delaying tasks to the point of experiencing subjective discomfort” (p. 503).

In the present study, the prevalence of procrastination section of the PASS was used. To measure the prevalence of procrastination, respondents were asked to describe their behavior for specific academic tasks such as writing a term paper, studying for exams, and weekly reading assignments. Respondents answered the questions for each academic task using a 5-point Likert scale for two questions: “To what degree do you procrastinate on this task?” (1 = “Never Procrastinate” to 5 = “Always Procrastinate”) and “To what degree is procrastination on this task a problem for you?” (1 = “Not at all a problem” to 5 = “Always a problem.”) The sum of the two questions for each procrastination area was computed for a total score. A higher score is more indicative of self-reported procrastination.

PASS was originally validated using a sample of 323 undergraduate university students. Cronbach’s alpha measured the internal consistency of items in the scales. The individual coefficients for the different procrastination prevalence areas were moderately high (e.g., for the essay questions the coefficient was .81). The procrastination prevalence scale had a test/retest reliability of .74 (Ferrari et al., 1995; Solomon & Rothblum, 1984). For the current study, Cronbach’s alpha was .80 for the PASS.

**Open-ended question.** Students also responded to an open-ended question based on Weiner’s (1985) categories of attribution regarding their reasons for procrastinating in online classes as shown below:

There are several reasons why a student procrastinates in an online course (intentionally delays or defers work that must be completed). Think about your current online courses. When you procrastinate, why do you believe this happens? Select the *one* reason you believe best describes your procrastination. Then, briefly explain your answer.  
I procrastinated in my online course because of:

a) *ability*. (e.g., I am not good at the subject we are studying. I am just not a good student.) State the specific reason that you feel your lack of ability resulted in your procrastination in your online course work.

b) *effort*. (e.g., I did not adequately prepare for the assignment; I did not study hard enough). State the specific reason that you feel your lack of effort resulted in your procrastination in your online course work.

c) *context*. (e.g., The circumstances in my life, in this course, or online learning in general interfere with my work.) State the specific reason that you feel the context (e.g., difficulty of the course, the professor, other responsibilities) of your online course resulted in your procrastination in your online course work.

d) *luck*. (e.g., I was unlucky in some way. Some infrequent occurrence interfered with my work such as an accident.) State the specific reason that you feel your lack of luck resulted in your procrastination in your online course work.

## Data analysis

**Research question 1.** Are online graduate students' attributional style predictive of the prevalence of student procrastination? In order to examine the influence of MMCS (Effort, Context, Luck) scores on the variance of the PASS (prevalence) scores, the data were analyzed using multiple regression. The PASS (prevalence) score was entered as the dependent variable and MMCS scores for Ability, Effort, Context, and Luck were entered as the independent or predictor variables. The significance and size of the coefficient of determination were examined to determine if the independent variables had a significant influence on procrastination. Additionally, the magnitude of impact for each independent variable was examined and interpreted.

Table 2

*Means, Standard Deviations, and Correlations for Regression of Prevalence of Procrastination on Attributional Style (N = 139)*

	1	2	3	4	5
1. Procrastination: Prevalence	1.00				
2. Attribution: Ability	.13	1.00			
3. Attribution: Effort	-.12	.40	1.00		
4. Attribution: Context	.01	-.03	.30	1.00	
5. Attribution: Luck	.11	-.05	.27	.66	1.00
Mean	17.24	17.15	14.80	11.19	8.41
Standard Deviation	4.25	3.97	4.19	4.86	5.44

Preliminary examination of the results indicated there was no extreme multicollinearity in the data (all variance inflation factors were less than 2). Exploratory analysis also indicated that the assumptions underlying the application of multiple linear regression (independence, normality, heteroscedasticity, and linearity) were met. The regression results (see Table 3) indicated that the set of independent variables significantly influenced 9% of the variance in procrastination,  $F(4, 134) = 3.33$ ;  $p < .05$ . Cohen's  $f^2$  measured effect size and was interpreted as approaching moderate strength at 0.10, 95% CI [12.13, 19.35] (Cohen, 1988). Three of the four independent variables significantly contributed to the explained variance. In order of descending impact they were Effort ( $t = -2.75$ ,  $p < .01$ ), Ability ( $t = 2.70$ ,  $p < .01$ ), and Luck ( $t = 2.13$ ,  $p < .05$ ).

Table 3  
*Results of Regression of Procrastination on Ability, Context, Effort, and Luck*

Variable	<i>b</i>	<i>Beta</i>	<i>Partial</i>	<i>t</i>
Ability	.26	.25	.23	2.70*
Effort	-.27	-.26	-.31	-2.75*
Context	-.05	-.06	-.05	-.55
Luck	.19	.09	.18	2.13**

Note. \*  $p < .01$ , \*\*  $p < .05$ .  $R^2 = 0.09$ .

**Research question 2.** To what do online graduate students attribute procrastination in online courses? Results from the open-ended question were analyzed using content analysis and summarized. Content analysis has been defined as “any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings” (Patton, 2002, p. 453). To answer the research question, responses were analyzed and categorized according to content. Frequency counts and percentage distributions were used. Categories and themes emerged from the data through careful review and comparison of the responses.

Of the 139 participants, 122 responded to the open-ended question. When asked to categorize their reasons for procrastination, 74 students in this sample described context as the primary reason for procrastination in online courses (see Table 4 below). Over 75% ( $n=56$  of 74) of these students who described context as the reason for procrastination specifically stated that they often postpone working on assignments in their online courses because of time pressures due to many other competing responsibilities (work, family, etc.) — an external attribution. One student commented, “I work full time and I am a mother and wife. I procrastinate because of time. . . I am so busy with the other things in my life...my online classes sometimes come last.” Four respondents blamed problems with the online environment itself stating, “I get frustrated using the technology and Blackboard. That is why I procrastinate!” Ten students blamed the professor for inadequate support in the course or poor course design with one stating, “When taking an online class, a student has more difficulty gaining assistance from the professor when confused.”

Table 4  
*Summary of student responses concerning attributions for procrastination (N = 122)*

Category	N	Percentage
Ability (Internal)	16	13%
Effort (Internal)	29	24%
Context (External)	74	61%
Luck (External)	3	2%

A smaller number of students cited internal causes for procrastination ( $n = 45$ ). Among students citing ability as the reason for procrastination ( $n = 16$ ), half described a concern that they might lack the general ability to complete the graduate course requirements with one student stating, "I think I have a hard time collecting my thoughts. I do get overwhelmed with the amount of information and how to best organize it." The other half of students specifically mentioned a believed that they lacked the required writing skills necessary to be successful stating, "I have a hard time expressing myself in writing. . . I just don't feel like I'm a good writer."

Of the students who stated that their procrastination was due to effort ( $n = 29$ ), four described a lack of motivation related to the course tasks as the reason for procrastination. One student described a lack of planning as a problem related to effort that resulted in procrastination. It was interesting that two students described their procrastination as an active strategy described by Steel (2007) as functional delay. One student described his/her procrastination by stating, "In some cases, I procrastinate to give myself more time to wrap my head around and gain more knowledge and information on the task and the expectation. In other cases, I procrastinate just to keep myself on a strict schedule." Both stated they believed they focused and performed better under the self-imposed stress of waiting until the last minute.

In summary, 63% of the respondents attributed their procrastination in online courses to external causes; 37% of the respondents attributed their procrastination to internal causes. The most frequently stated external cause for procrastination was context – a lack of time to exert an adequate amount of effort in the class because of work and family responsibilities forced them to wait until the last minute to complete course assignments.

## Discussion

The results of this study provide insight into why these online students procrastinated. Collectively, the results of this mixed methods study indicated that effort, ability, context, and luck influence procrastination. Quantitative results indicated that together, effort, ability, and luck significantly influenced student procrastination; however, only ability and luck contributed uniquely to that influence. Results of the open-ended question indicated that almost two-thirds of the respondents attributed their procrastination behaviors to external causes, primarily the effect of context on their effort in online classes.

### Research Question 1

Are online graduate students' attributional style predictive of the prevalence of student procrastination? Results indicated that these online, graduate students' attributions for procrastination to luck, ability, and effort uniquely and synergistically influence their passive procrastination. These results further indicated that as attributions to ability and luck increased, procrastination increased for this sample of online students. Thus, the more students perceived their academic outcomes as resulting from their ability levels (internal, stable, uncontrollable) or luck (external, unstable, uncontrollable), the more likely they were to procrastinate. However, as attribution to effort decreased, procrastination increased. This indicated that the more students believed academic outcomes resulted from the amount of effort or lack of effort they put forth, the less likely they were to procrastinate. These findings have important implications for professors of online courses and future researchers as described below.

***Luck, ability, and procrastination.*** In this sample, as attributions to luck increased, so did procrastination on academic tasks. The finding about luck supports those of Brownlow and Reasinger (2000) who found that high undergraduate procrastinators tended to attribute their successes to external, unstable, and uncontrollable factors such as luck. This is an unfortunate attributional tendency as one is less likely to take steps to improve academic outcomes when one believes that a variable that is outside of his or her control drives performance on a task (Harvey & Martinko, 2010).

Results also indicated that there was a positive relationship between ability and procrastination. As attribution for academic success to ability increased, an increase in procrastination resulted. These results contradict those of Brownlow and Reasinger (2000) who found that high undergraduate academic procrastinators tended to make external attributions for their successes. While ability is an internal and stable attribution, it is similar to luck because learners perceive it as an influence on their academic performance over which they can exert little control. Unless students believe that ability can in some way be interrupted by other factors, they may fail to persist in an academic task.

Additionally, when students' view of their academic ability is threatened, they often attempt to avoid failure by engaging in behavior such as not trying, procrastinating, and denial of effort. "What these behaviors accomplish is reducing the negative implications of failure. From the students' point of view, failure without effort does not negatively reflect on their ability. What they have achieved is "failure with honor." (Ames, 1990, p. 413).

***Procrastination and effort.*** The data revealed a negative relationship between effort and procrastination. As attribution to effort decreased, procrastination increased, a result similar to that obtained by Brownlow and Reasinger (2000). Academic procrastination may protect self-image because failure to perform at an acceptable level can be blamed on lack of effort rather than a lack of ability (Ames, 1990).

Some students believe that if too much effort is required, then ability to perform is lacking; if one has high ability, then one does not need to exert a great deal of effort. From this perspective, exerting effort reflects lower ability. As a result of this point of view, individuals who feel this way about academic effort may engage in procrastination as a means of protecting their self-image. If they procrastinate, then these students can blame any future failure on lack of effort rather than on their own lack of ability (Brownlow & Reasinger, 2000; Harvey & Martinko, 2010; Weiner, 1985). This view of effort may indicate that one's self-efficacy for academic efforts, particularly in the online environment, is lacking. Thus, self-efficacy may be a mediating variable, but is beyond the scope of the current study. Further research should explore

the potential role of self-efficacy in the relationship between online students' attributional beliefs and procrastination.

### Research Question 2

To what do online graduate students attribute procrastination in online courses? The findings of this study revealed that for these students, the majority of attributions for procrastination were external (65%). Most of the external attributions were related to time pressures brought about by competing obligations to work and family. Within Weiner's (1989, 2000) theory of attribution, work and family are considered contextual attributions that are controllable and unstable. Research and theory suggest that context-based attributions reflect a self-serving bias to protect one's ego from perceived lack of ability and pose a serious threat to improving performance (Shepperd, Malone, & Sweeney, 2008). Student comments indicated that they believed that if familial and professional obligations had not interfered with their academic work, they would not have procrastinated. For example, one student stated, "It is very difficult to teach a class every day, grade their papers, plan their next day's work, maintain a family with dinner and washed clothes, and take two classes to reach the dream of a master's degree. Sometimes my own classes have to take a back seat." If external attributions remain unchallenged, such attributions can be a hindrance to future academic success.

Students' heavy tendency to attribute poor academic outcomes to contextual issues seems at first to provide contradictory information as opposed to the results of the quantitative measure (MMCS) that revealed that context as a single measure has no significant relationship to procrastination ( $r = .01, p < .01$ ). Further investigation of specific attributions to context revealed that most of these students were, in fact, saying that context interfered with their effort. The quantitative data supports a significant relationship between attributions to context and to effort ( $r = .30, p < .01$ ).

In addition, comments attributing effort failure to familial and work influences, such as, "I do not take out enough time to do good work because I am working full-time and taking care of a family," were typical. This ego protecting attributional tendency, in which students noted that failures were caused by inadequate effort due to contextual issues, was common in this study and not uncommon in literature regarding undergraduate students (McClure et al., 2011; Shepperd et al., 2008). Attributions to context are frequently very real and challenging, particularly when teaching working adults who take online courses because they somewhat fit into their busy schedules (Patton, 2012).

Since time pressures appear to have an influence on students' tendency to procrastinate, it is possible that some type of time management training could reduce procrastination (Van Eerde, 2003). Such training appears to reduce task avoidance and increase the ability to effectively manage time among working adults.

However, research indicates that attributing academic failures to contextual factors, particularly family and friends as was the case in the current study, negatively impacts achievement (McClure et al., 2011). In this study, student comments were interpreted to reflect that students realized on some level that less than stellar performance resulted from a lack of effort, but explained that contextual influences caused the effort deficiency. Moreover, context was not viewed as an unstable and controllable factor. Instead, it was viewed as an uncontrollable, unwavering force that prevented dedication of proper effort levels to academic tasks.

Some students in this sample reported a lack of motivation toward course content as a reason for procrastination. There is some research that indicates that a decrease in intrinsic motivation in online graduate students is related to a decrease in academic procrastination (Rakes & Dunn, 2010). Some aspects of course design can encourage intrinsic motivation such as including activities that increase the perception of social presence of both teachers and other students (Yang, Tsai, Kim, Cho, & Laffey, 2006), including appropriately challenging assignments (Deci & Ryan, 1985), and giving students the opportunity to make choices in the ways in which they complete course assignments (Enzle, Wright, & Redondo, 1996).

When inability to devote sufficient effort to an academic task is attributed to an external cause, self-esteem is protected, but academic performance is not. Thus, instructional strategies and course design must be developed to help busy working professionals and those who perceive context as a threat to effort. For example, Skibba (2009) found that many online instructors reported that using flexible due dates helped busy working adults achieve higher levels of academic success because such flexibility allows students increased opportunities to better accommodate their busy work and life schedules. Future research should further explore the relationship of effort and context as well as means of addressing perceived context-based attributions for academic shortcomings. Moreover, future researchers should place particular emphasis on exploring the influence of familial and work-related attributional tendencies in graduate students and tactics for addressing those beliefs and issues in online courses as the noted studies pertained to undergraduate students.

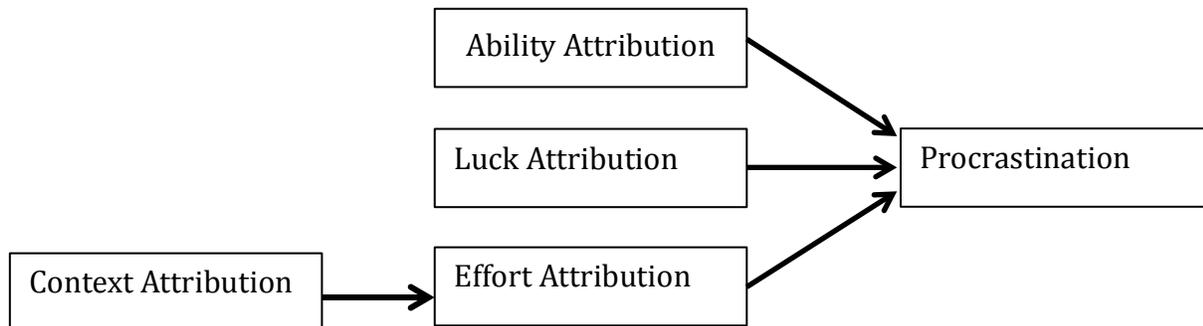
### **Limitations and Future Research**

Results of this study should be interpreted in view of several limitations and viewed as preliminary. The study explored relationships among variables; therefore, the analysis cannot establish cause and effect relationships. Additional research on the relationships between attribution and procrastination using larger samples of online graduate students is needed. This study employed self-report measures that assessed students' perception of their tendency to procrastinate. Future research could use tracking tools found in online learning platforms (i.e., Blackboard) to better identify actual procrastination behavior such as prompt submission of assignments, when students access study materials for papers and exams relative to deadlines, etc. This study was also limited because it did not include achievement data.

However, the theoretical order of influence suggests that the influence of attributional beliefs on procrastination precedes the influence of procrastination on achievement. Moreover, the qualitative results of this study suggest that the influence of context on effort may precede the influence of effort on procrastination, and the quantitative data suggests a significant relationship between context and effort, but no significant zero order correlation was found between context and procrastination. Thus, future research should use structural equation modeling to explore the temporal influence of context on effort, then ability, luck, and effort attributions on procrastination, and subsequently, the influence of procrastination on achievement.

Collectively results indicated that the more students attributed academic outcomes to ability and luck, the more they procrastinated. Participants further indicated that the more students attributed academic outcomes to effort, the less they procrastinated. Finally, the qualitative results indicated that students believed they were able to provide less effort because of heavier contextual influences such as family and work, and therefore, procrastinated more. These findings suggest a possible model for the influence of attributions on procrastination

behavior in this sample of online learners that is presented in Figure 1. Future research should further explore this hypothetical model using Structural Equation Modeling (SEM).



*Figure 1.* Possible Model of Attributional Influence on Procrastination.

When  $R^2$  is low as it was in the present study (.09), this likely indicates that there are additional independent variables that affect the dependent variable other than the one in the regression equation. In studies involving human behavior in educational research, low  $R^2$  values are common. This finding does not mean that the variable under consideration does not have a significant effect. An attempt to establish an acceptable value of  $R^2$  across all applications is inappropriate (Colton & Bower, 2002). Such a result simply indicates that future research should examine other variables that might also affect procrastination.

Future research should include a measure of academic self-efficacy in order to determine if there is a relationship between self-efficacy and students' attributions for procrastination. Future research should also examine the effects of attribution training on online graduate students to determine if such training, focused on attributions for procrastination, could positively affect the attributions and, as a result, reduce procrastination in online students. Such training could make students aware of and improve beliefs about the causes of academic failures and successes in order to enhance future achievement motivation.

Previous research indicated that attribution training is beneficial in the majority of cases; however, no single form of attribution training has been shown to be most effective (Siegel-Robertson, 2000; Siegel & Shaughnessy, 1996). Research supports that even a single presentation concerning detrimental attributions and their effect on performance and what new attributions should be adopted has been shown to produce positive changes in students' attributional tendencies (Doctor, 2004; Wilson & Linville, 1982, 1985). Application of this type of single presentation training to attributions for procrastination should be investigated.

By re-training students' attributional tendencies and influencing students' academic self-efficacy, student success in online courses may be increased. Future research should investigate specific training techniques for improving students' attributions regarding procrastination, possible relationships between these attributions and self-efficacy, and ultimately the impact of such training on student performance. Self-efficacy and performance data should be incorporated into future SEM studies.

**Author Note**

This research was sponsored by Project RITE (Research in Technology in Education) through a grant funded by the Office of Information Technology, The University of Tennessee.

## References

- Allen, E., & Seaman, J. (2010). *Class differences: Online education in the United States, 2010*. Babson Survey Research Group and the Sloan Consortium. Retrieved from [http://sloanconsortium.org/publications/survey/pdf/class\\_differences.pdf](http://sloanconsortium.org/publications/survey/pdf/class_differences.pdf)
- Allen, E., & Seaman, J. (2011). *Going the distance: Online education in the United States, 2011*. Babson Survey Research Group. Retrieved from <http://onlinelearningsurvey.com/reports/goingthedistance.pdf>
- Ames, C. A. (1990). Motivation: What teachers need to know. *Teachers College Record, 91*(3), 409-421.
- Brownlow, S., & Reasinger, 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*(5), 15-34.
- Chu, A. H., & Choi, J. N. (2005). Rethinking procrastination: Positive effects of “active” procrastination on attitudes and performance. *Journal of Social Psychology, 145*(3), 245-264.
- Cleary, T. J., & Zimmerman, B. J. (2004). Self-regulation empowerment program: A school-based program to enhance self-regulated and self-motivated cycles of student learning. *Psychology in the Schools, 41*(5), 537-550.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2<sup>nd</sup> ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Colton, J. A., & Bower, K. M. (2002). Some misconceptions about  $R^2$ . *International Society of Six Sigma Professionals, 3*(2), 20-22.
- Corkin, D. M., Yu, S. L., & Lindt, S. F. (2011). Comparing active delay and procrastination from a self-regulated learning perspective. *Learning and Individual Differences, 21*(5), 602-606.
- Daymont, T., Blau, G., & Campbell, D. (2011). Deciding between traditional and online formats: Exploring the role of learning advantages, flexibility, and compensatory adaptation. *Journal of Behavioral and Applied Management, 12*(2), 156-175.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Springer.
- Doctor, T. (2004). *Does video-based and live attribution training improve college freshman performance on academic-based tasks?* (Unpublished doctoral dissertation). West Virginia University, Morgantown, West Virginia.
- Dunn, K. E., Osborne, C., & Link, H. J. (2012). Exploring the influence of students' attribution for success on their self-regulation in Pathophysiology. *Journal of Nursing Education, 51*(6), 353-357.
- Ellis, A., & Knaus, W. J. (1977). *Overcoming procrastination*. New York, NY: Signet Books.
- Elvers, G. C., Polzella, D. J., & Graetz, K. (2003). Procrastination in online courses: Performance and attitudinal differences. *Teaching of Psychology, 30*(2), 159-162.
- Enzle, M., Wright, E., & Redondo, I. (1996). Cross-talk generalization of intrinsic motivation effects. *Canadian Journal of Behavioral Science, 28*(1), 19-26.
- Ferrari, J. R., Johnson, J. L., & McCown, W. G. (1995). *Procrastination and task avoidance: Theory, research, and treatment*. New York, NY: Springer.

- Gargari, R. B., Sabouri, H., & Norzad, F. (2011). Academic procrastination: The relationship between causal attribution styles and behavioral postponement. *Iranian Journal of Psychiatry and Behavioral Sciences*, 5(2), 76-82.
- Garrett, R. (2007). Expanding demand for online higher education: Surveying prospective students. *Journal of Asynchronous Learning Networks*, 11(1), 49-53.
- Graham, S. & Williams, C. (2009). An attributional approach to motivation in school. In Wentzel K. & Wigfield. A. (Eds.), *Handbook of Motivation at School* (pp.171-196). New York, NY: Taylor and Francis.
- Hamilton, R. J., & Akhter, S. (2002). Psychometric properties of the Multidimensional-Multiattributional Causality Scale. *Educational and Psychological Measurement*, 62(5), 802-817. doi: 10.1177/001316402236879
- Harvey, P., & Martinko, M.J. (2010). Attribution theory and motivation. In N. Borkowski (Ed.), *Organizational behavior in health care*, (2nd ed., pp. 147-164). Boston: Jones and Bartlett.
- Hoppe, C. S. (2011). *Academic procrastination as a predictor of explanatory style in college students*. (Unpublished master's thesis). Carroll College, Helena, Montana. Retrieved from [http://www.carroll.edu/library/thesisArchive/HoppeCFinal\\_2011.pdf](http://www.carroll.edu/library/thesisArchive/HoppeCFinal_2011.pdf)
- Humphrey, P., & Harbin, J. (2010). An exploratory study of the effect of rewards and deadlines on academic procrastination in Web-based classes. *Academy of Educational Leadership Journal*, 14(4), 91-98.
- Klingsieck, K. B., Fries, S., Horz, C., & Hofer, M. (2012). Procrastination in a distance university setting. *Distance Education*, 33(3), 295-310.
- Lefcourt, H. M. (1981). The construction and development of the Multidimensional-Multiattributional Causality Scales. In H. M. Lefcourt (Ed.), *Research with the Locus of Control Construct* (Vol. 1, pp. 245-277). New York, NY: Academic Press.
- Lefcourt, H. M., von Baeyer, C. L., Ware, E. E., & Cox, D. J. (1979). The Multidimensional-Multiattributional Causality Scale: The development of a goal-specific locus of control scale. *Canadian Journal of Behavioural Science*, 11(4), 286-304.
- McClure, J., Meyer, L. H., Garisch, J., Fischer, R., Weir, K. F., & Walkey, F. H. (2011). Students' attributions for their best and worst marks: Do they relate to achievement? *Contemporary Educational Psychology*, 36(2), 71-81.
- McCown, W., & Johnson, J. (1991). Personality and chronic procrastination by university students during an academic examination period. *Personality and Individual Differences*, 12(5), 413-415.
- Michinov, N., Brunot, S., LeBohec, O., Juhel, J., & Delaval, M. (2011). Procrastination, participation, and performance in online learning environments. *Computers & Education*, 56, 243-252.
- Miller, D.T. & Ross, M. (1975). Self-serving biases in the attribution of causality: Fact or fiction? *Psychological Bulletin*, 82(2), 213-225.
- Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York, NY: McGraw-Hill.
- O'Brien, W. K. (2002). Applying the transtheoretical model to academic procrastination. (Doctoral dissertation) Available from ProQuest Theses and Dissertations database. (UMI No. 3032320)
- Onwuegbuzie, A. J. (2004). Academic procrastination and statistics anxiety. *Assessment and Evaluation in Higher Education*, 29(1), 3-19.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, CA: Sage.

- Patton, S. (2012). Colleges struggle to respond to graduate students in distress. *The Chronicle of Higher Education*. Retrieved from <http://www.gradresources.org/menus/chronicleAug2012.shtml>
- Rakes, G. C., & Dunn, K. E. (2010). The impact of online graduate students' motivation and self-regulation on academic procrastination. *Journal of Interactive Online Learning*, 9(1), 78-93.
- Romano, J., Wallace, T. L., Helmick, I. J., Carey, L. M., & Adkins, L. (2005). Study procrastination, achievement, and academic motivation in Web-based and blended distance learning. *The Internet and Higher Education*, 8(4), 299-305.
- Rothblum, E. D., Solomon, L. J., & Murakami, J. (1986). Affective, cognitive, and behavioral differences between high and low procrastinators. *Journal of Counseling Psychology*, 33(4), 387-394.
- Schraw, G., Wadkins, T., & Olafson, L. (2007). Doing the things we do: A grounded theory of academic procrastination. *Journal of Educational Psychology*, 99(1), 12-25.
- Shachar, M., & Neumann, Y. (2010). Twenty years of research on academic performance differences between traditional and distance learning: Summative meta-analysis and trend examination. *MERLOT Journal of Online Learning and Teaching*, 6(2), 318-334. Retrieved from [http://jolt.merlot.org/vol6no2/shachar\\_0610.pdf](http://jolt.merlot.org/vol6no2/shachar_0610.pdf)
- Shepperd, J., Malone, W., & Sweeney, K. (2008). Exploring causes of the self-serving bias. *Social and Personality Psychology Compass*, 2(2), 895-908.
- Siegel, J., & Shaughnessy, M. F. (1996). An interview with Bernard Weiner. *Educational Psychology Review*, 8(2), 165-174.
- Siegel-Robertson, J. (2000). Is attribution training a worthwhile classroom intervention for K-12 students with learning difficulties? *Educational and Psychological Review*, 12(1), 111-134.
- Skibba, K. (2009). *What faculty learn teaching adults in multiple course delivery formats*. Paper presented at the Twenty-Fifth Annual Conference on Distance Teaching and Learning; Madison, WI.
- Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioral correlates. *Journal of Counseling Psychology*, 31(4), 503-509.
- Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, 133(1), 65-94.
- Tice, D. M., & Baumeister, R. F. (1997). Longitudinal study of procrastination, performance, stress, and health: The costs and benefits of dawdling. *Psychological Science*, 8(6), 454-458.
- Tuckman, B. W. (2005). Academic procrastinators: Their rationalizations and Web-course performance. *Psychological Reports*, 96(3c), 1015-1021.
- Tuckman, B. W. (2007). The effect of motivational scaffolding on procrastinator's distance learning outcomes. *Computers & Education*, 49(2), 414-422.
- Van Eerde, W. (2003). Procrastination at work and time management training. *Journal of Psychology*, 137(5), 421-434.
- Weiner, B. (1972). *Theories of motivation: From mechanism to cognition*. Chicago, IL: Markham Publishers.
- Weiner, B. (1974). *Achievement motivation and attribution theory*. Morristown, N.J.: General Learning Press.

- Weiner, B. (1985). A theory of achievement motivation and emotion. *Psychological Review*, 92(4), 548-573.
- Weiner, B. (1986). *An attributional theory of motivation and emotion*. New York, NY: Springer-Verlag.
- Weiner, B. (1994). Integrating social and personal theories of achievement striving. *Review of Educational Research*, 64(4), 557-573.
- Weiner, B. (2000). Intrapersonal and interpersonal theories of motivation from an attributional perspective. *Educational Psychology Review*, 12(1), 1-14.
- Weiner, B. (2006). *Social motivation, justice, and the moral emotions: An attributional approach*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Weiner, B., & Graham, S. (1989). Understanding the motivational role of affect: Lifespan research from an attributional perspective. *Cognition and Emotion*, 3(4), 401-418. Reprinted in Izard, C. (Ed.), *Development of Emotion-Cognition Relations*. Hillsdale, NJ: Erlbaum.
- Wilson, T. D., & Linville, P. W. (1982). Improving the academic performance of college freshman: Attribution therapy revisited. *Journal of Personality and Social Psychology*, 42(2) 367-376.
- Wilson, T. D., & Linville, P. W. (1985). Improving the academic performance of college freshman using attributional techniques. *Journal of Personality and Social Psychology*, 49(1), 287-293.
- Wohl, M. J. A., Pychyl, T. A., & Bennett, S. H. (2010). I forgive myself, now I can study: How self-forgiveness for procrastinating can reduce future procrastination. *Personality and Individual Differences*, 48(7), 803-808.
- Yang, C., Tsai, I., Kim, B., Cho, M., & Laffey, J. M., (2006). Exploring the relationships between students' academic motivation and social ability in online learning environments. *The Internet and Higher Education*, 9(4), 277-286.
- Zacharis, N. Z. (2009). Fostering students' participation in online environments: Focus on interaction, communication and problem solving. *Journal of College Teaching and Learning*, 6(2), 25-34.
- Zimmerman, B. J. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, 81(3), 329-339.