I’ll Go to the Library Later: The Relationship between Academic Procrastination and Library Anxiety

Anthony J. Onwuegbuzie and Qun G. Jiao

Approximately 95 percent of college students procrastinate on academic tasks such as writing term papers, studying for examinations, and keeping up with weekly reading assignments. At the graduate level, an estimated 60 percent of students procrastinate on academic tasks. Academic procrastination stems primarily from fear of failure and task aversiveness. It has been theorized, though not tested empirically, that highly anxious graduate students typically procrastinate while engaged in library-related tasks. This study investigated the relationship between academic procrastination and library anxiety at the graduate level. Participants included 135 graduate students enrolled in three sections of a required introductory-level educational research course. Findings revealed that, overall, academic procrastination was significantly positively related to the following dimensions of library anxiety: affective barriers, comfort with the library, and mechanical barriers. A canonical correlation analysis revealed that academic procrastination resulting from both fear of failure and task aversiveness was related significantly to barriers with staff, affective barriers, comfort with the library, and knowledge of the library. Implications for library anxiety reduction as a procrastination intervention are discussed.

Laura J. Solomon and Esther D. Rothblum found that between 27 and 46 percent of undergraduate students reported that they always or almost always

Anthony J. Onwuegbuzie is an Assistant Professor in the Department of Educational Leadership, College of Education, at Valdosta State University; e-mail: tonwuegb@valdosta.edu. Qun G. Jiao is an Associate Professor and Reference Librarian in Newman Library, Baruch College, at the City University of New York; e-mail: qunjb@cunyvm.cuny.edu.
procrastinated on writing term papers, studying for examinations, and keeping up with weekly readings. The authors also discovered that nearly one-quarter of these students reported that procrastination was always or almost always a problem for them when undertaking these tasks.  

Similarly, Jeffrey L. Clark and Oliver W. Hill found that between 30 and 45 percent of African-American undergraduate students reported problems with procrastination on writing term papers, studying for examinations, and keeping up with weekly reading assignments. Moreover, between 55 and 60 percent of the students wanted to decrease their procrastination on these tasks.  

The study participants consisted of 135 graduate students enrolled in several sections of a graduate-level research methodology course at a small midsouthern university.  

Using factor analysis, Solomon and Rothblum found that fear of failure and task aversiveness are the primary reasons for procrastinating, with the former explaining 49 percent of the variance in why undergraduate students procrastinate and the latter accounting for 18 percent of the variance. The fear of failure factor includes items that relate to evaluation anxiety and overly perfectionistic standards for one’s performance and low self-confidence. In contrast, the task aversiveness factor comprises items that reflect a dislike of engaging in academic activities and a lack of energy. The authors reported that the percentage of college students who endorsed items representing the fear of failure factor ranged from 6.3 to 14.1 percent, whereas endorsement of the task aversiveness factor ranged from 19.4 to 47.0 percent. These findings led the authors to conclude that procrastinators at the undergraduate level could be divided into two groups: a relatively small, but extremely homogenous, group of students who procrastinate because of fear of failure; and a relatively heterogeneous group of students who procrastinate because of task aversiveness.  

Recently, Anthony J. Onwuegbuzie found that 41.7 percent of graduate students reported that they always or almost always procrastinate on writing a term paper, 39.3 percent procrastinate on studying for examinations, and 60.0 percent procrastinate on keeping up with weekly reading assignments. In addition, between 21 and 42 percent reported that procrastination was always or almost always a problem when undertaking these tasks, and between 65 and 72 percent wanted to decrease their tendency to procrastinate.  

Surprisingly, graduate students may have an even greater tendency to procrastinate on academic tasks than do undergraduate students. Indeed, Onwuegbuzie found that graduate students were nearly 3.5 times more likely to report that they always or almost always procrastinate on keeping up with weekly reading assignments and nearly 2.5 times more likely to report that procrastination was always or almost always a problem when studying for examinations than were a comparison group of undergraduate students in Solomon and Rothblum’s study.  

Although the effects of academic procrastination among graduate students can influence performance in all academic areas, it is likely that it is particularly detrimental when students are engaged in proposing and/or conducting research, as is typically the case in research methodology courses. Onwuegbuzie found that many graduate students procrastinate at various stages of the research process, including while engaged in the literature review process. Because many students also experience library anxiety while conducting research, it is likely that academic procrastination is related to library anxiety, although this has not been tested empirically.  

Constance A. Mellon described library anxiety as a situation-specific, negative feeling or emotional disposition that occurs when a student is in a library setting. It also has been reported that library anxiety de-motivates students from beginning or prolonging their search, thereby impeding development of their library skills. According to Carol C. Kuhlthau, students with
high levels of library anxiety tend to engage in negative ruminations that lead to cognitive interference during various stages of the information search process. Kuhlthau identified six stages during which anxiety levels may be elevated: task initiation, topic selection, prefocus exploration, focus formulation, information collection, and search closure. Onwuegbuzie reported that many graduate students constantly expressed their discomfort with the library search process, suggesting that they experience difficulties adapting to the library environment.

According to Rothblum, Soloman, and Janice Murakami, academic procrastinators have the self-reported tendency to always or almost always experience problematic levels of anxiety. Moreover, academic procrastination has been found to be related positively to generalized and specific kinds of anxiety such as test anxiety, social anxiety, and statistics anxiety. Thus, the purpose of this study was to investigate the relationship between academic procrastination and library anxiety. Specifically, the relationships between academic procrastination and five library anxiety dimensions were studied empirically. It was hypothesized that academic procrastination would be positively related to library anxiety.

**Method**

**Participants**
The study participants consisted of 135 graduate students enrolled in several sections of a graduate-level research methodology course at a small midsouthern university. Participation in the study was voluntary and anonymous, with no student declining. To participate, students were required to sign informed consent documents. The ages of the participants ranged from twenty-one to fifty-one (mean = 26.0, SD = 6.8). Mean academic achievement, as measured by grade point average, was 3.57 (SD = 0.36). The overwhelming majority of the participants were female (92.6 percent) and white (93.3%). However, a nonparametric Wilcoxon two-sample t-test revealed no gender difference (p < .05) with respect to levels of overall academic procrastination, fear of failure, and task aversiveness. Indeed, this finding is consistent with other studies in which procrastination scores by males and females were not significantly different. In addition, a series of Wilcoxon two-sample t-tests revealed no gender difference (p < .05) with respect to the five dimensions of library anxiety. Thus, all data were collapsed across gender.

**Instruments and Procedure**

Participants were administered the Library Anxiety Scale (LAS) and the Procrastination Assessment Scale—Students (PASS). Developed by Sharon L. Bostick, the LAS is a 43-item, 5-point Likert-format instrument that assesses levels of library anxiety. The instrument has five subscales: barriers with staff, affective barriers, comfort with the library, knowledge of the library, and mechanical barriers. “Barriers with staff” refers to the perceptions of students that librarians and other library staff are intimidating, unapproachable, and too busy to provide assistance in using the library. “Affective barriers” stems from students’ feelings of inadequacy about using the library. “Comfort with the library” deals with how safe, welcoming, and nonthreatening students perceive the library to be. “Knowledge of the library” refers to how familiar students feel they are with the library. Finally, “mechanical barriers” refers to feelings that emerge as a result of student reliance on mechanical library equipment, including computer printers, copy machines, and change machines. A high score on any subscale represents high anxiety in this area. Qun G. Jiao and Anthony J. Onwuegbuzie found that the LAS subscales generated scores that yielded coefficient alpha reliabilities ranging from .60 (mechanical barriers) to .90 (barriers with staff). For the present study, scores from the subscales yielded alpha reliability coefficients ranging from .65 (knowledge of the library) to .94 (barriers with staff).

The PASS, which was developed by Solomon and Rothblum, consists of two parts. The first part lists six academic
tasks involving writing a term paper, studying for examinations, keeping up with weekly reading assignments, performing administrative tasks, attending meetings, and performing academic tasks in general. Respondents are asked to complete three rating scales for the six tasks indicating the frequency with which they procrastinate on each task (1 = Never procrastinate; 5 = Always procrastinate), whether their procrastination on the task is a problem (1 = Not at all a problem; 5 = Always a problem), and whether they want to decrease their procrastination on the task (1 = Do not want to decrease; 5 = Definitely want to decrease). As recommended by Solomon and Rothblum, the PASS items pertaining to the frequency with which respondents procrastinate on a task and whether their procrastination is a problem were summed to provide an overall measure of academic procrastination, with total scores ranging from twelve to sixty. Higher scores are indicative of self-reported academic procrastination.40

The second section of the PASS asks students to think of the last time they procrastinated on writing a term paper. Students then indicated how much each of the twenty-six reasons reflected why they procrastinated (1 = Not at all reflects why I procrastinated; 5 = Definitely reflects why I procrastinated). A factor analysis undertaken by Solomon and Rothblum on the reasons why college students procrastinate indicated two factors: fear of failure and task aversiveness.41

The PASS has been shown to possess adequate construct validity, as evidenced by significant relationships between scores on the scale and behavioral measures of procrastination such as delay in taking self-paced quizzes and in handing in a term paper, delay in submitting course requirements, and delay in participating in psychology experiments.42–44 Furthermore, Joseph R. Ferrari reported adequate internal consistency estimates for each part of the PASS and both factors ranging from .60 to .80, and acceptable test–retest reliabilities at one month ranging from .63 to .74.45 For the present study, the coefficient alpha reliability estimates of the PASS measures were .84 for the procrastination scale, .85 for the fear of failure factor, and .76 for the task aversiveness factor.

Data Analysis
A canonical correlation analysis was conducted to identify a combination of reasons for procrastination dimensions (namely, fear of failure and task aversiveness) that might be correlated with a combination of library anxiety dimensions. Canonical correlation analysis is utilized to examine the relationship between two sets of variables when each set contains more than one variable.46–49 Indeed, as noted by Thomas R. Knapp, “virtually all of the commonly encountered tests of significance can be treated as special cases of canonical correlation analysis.”50 That is, canonical correlation analysis can be used to undertake all the parametric tests that canonical correlation methods subsume as special cases, including t-tests, multiple regression, analysis of variance, and analysis of covariance.51

In the present study, the five dimensions of library anxiety were treated as the dependent multivariate set of variables, whereas the two components of reasons for procrastination were utilized as the independent multivariate set of variables. The number of canonical functions (i.e., factors) that can be generated for a given data set is equal to the number of variables in the smaller of the two variable sets. Because the reason for procrastination section of the PASS has two dimensions and the LAS has five dimensions, two canonical functions were generated.

For the first canonical coefficient, standardized canonical function coefficients and structure coefficients were computed. Standardized canonical function coefficients are computed weights that are applied to each variable in a given set in order to obtain the composite variate used in the canonical correlation analysis. As such, standardized canonical function coefficients are analogous to factor pattern coefficients in factor analysis or to beta coefficients in a regression analysis.52 Struc-
ture coefficients are the correlations between a given variable and the scores on the canonical composite (namely, the latent variable) in the set to which the variable belongs. Thus, structure coefficients indicate the extent to which each variable is related to the canonical composite for the variable set. Indeed, structure coefficients are essentially bivariate correlation coefficients that range in value between -1.0 and +1.0 inclusive. The square of the structure coefficient is the proportion of variance that the original variable shares linearly with the canonical variate.

**Results**

Table 1 presents the Pearson product-moment correlations (zero-order correlations) between overall academic procrastination and the five dimensions of library anxiety. Using the Bonferroni adjustment to control for type I error, it can be seen that overall academic procrastination was related positively to affective barriers, comfort with the library, and mechanical barriers.

Table 1 also presents the correlations between the two reasons for procrastination subscales (fear of failure and task aversiveness) and the five dimensions of library anxiety. Again, using the Bonferroni adjustment, it can be seen that (1) fear of failure was related positively to affective barriers and comfort with the library and (2) task aversiveness was related positively to affective barriers and knowledge of the library.

The strength of the relationship between the two sets of variables was assessed by examining the magnitude of the canonical correlation coefficients. These coefficients indicate the degree of relationship between the weighted procrastination variables and the weighted library anxiety variables. In addition, the significance of the canonical roots was tested via the F-statistic based on Radhakrishna C. Rao’s approximation.

The canonical analysis revealed that both canonical correlations combined were statistically significant ($F_{[10, 256]} = 3.45, p < .05$). However, when the first canonical root was excluded, the remaining canonical root was not statistically significant, suggesting that the first canonical function was statistically significant, but the second canonical root was not statistically significant. However, because the calculated probabilities are sensitive to sample size, particular attention should be paid to the educational (practical) significance of the obtained results.

The educational significance of canonical correlations typically are assessed by examining their size. The canonical correlation indicates how much variance the sets of weighted original variables share with each other. In the present study, the first canonical correlation ($R_1 = .42$)

<table>
<thead>
<tr>
<th></th>
<th>Overall Academic Procrastination</th>
<th>Fear of Failure</th>
<th>Task Aversiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barriers with staff</td>
<td>.19</td>
<td>.20</td>
<td>.03</td>
</tr>
<tr>
<td>Affective barriers</td>
<td>.24*</td>
<td>.39*</td>
<td>.22*</td>
</tr>
<tr>
<td>Comfort with the library</td>
<td>.25*</td>
<td>.23*</td>
<td>.10</td>
</tr>
<tr>
<td>Knowledge of the library</td>
<td>.09</td>
<td>.16</td>
<td>.22*</td>
</tr>
<tr>
<td>Mechanical barriers</td>
<td>.24*</td>
<td>.09</td>
<td>.04</td>
</tr>
</tbody>
</table>

*Statistical significance after Bonferroni adjustment
TABLE 2
Canonical Solution for First Function

<table>
<thead>
<tr>
<th>Measure</th>
<th>Standardized Coefficient</th>
<th>Structure Coefficient</th>
<th>Structure (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library Anxiety Dimension:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barriers with staff</td>
<td>-0.305*</td>
<td>.411*</td>
<td>16.9</td>
</tr>
<tr>
<td>Affective barriers</td>
<td>1.122*</td>
<td>.938*</td>
<td>88.0</td>
</tr>
<tr>
<td>Comfort with the library</td>
<td>-0.044</td>
<td>.533*</td>
<td>28.4</td>
</tr>
<tr>
<td>Knowledge of the library</td>
<td>0.261</td>
<td>.503*</td>
<td>25.3</td>
</tr>
<tr>
<td>Mechanical barriers</td>
<td>-0.165</td>
<td>.215</td>
<td>4.6</td>
</tr>
<tr>
<td>Reason for Procrastination Dimension:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear of failure</td>
<td>0.792*</td>
<td>.933*</td>
<td>87.0</td>
</tr>
<tr>
<td>Task aversiveness</td>
<td>0.387*</td>
<td>.675*</td>
<td>45.6</td>
</tr>
</tbody>
</table>

*Loadings with large-effect sizes

Discussion

The purpose of this study was to investigate empirically the relationship between academic procrastination and five dimensions of library anxiety. Findings revealed that, overall, academic procrastination is significantly positively related to affective barriers, comfort with the library, and mechanical barriers. In addition, academic
procrastination resulting from both fear of
failure and task aversiveness appears to
be related significantly to barriers with
staff, affective barriers, comfort with the
library, and knowledge of the library. These
findings are consistent with those of Onwuegbuzie, who noted that many
graduate students procrastinate while en­
gaged in the process of writing a research
proposal. These results are also in accor­
dance with the bulk of the literature that
has documented a relationship between
academic procrastination and the gener­
alized and specific kinds of anxiety such
as test anxiety, statistics anxiety, social anxi­
ety, and self-consciousness.64–68

Although there is strong evidence of
a relationship between academic
procrastination and library anxiety, it is
unclear whether it is a causal
relationship.69,70

The relationship between academic
procrastination and library anxiety pro­
vides further evidence that procrastina­
tion is more than deficits in time manage­
ment and study skills but also includes
cognitive-affective components. In fact,
according to Rothblum, Solomon,
and Murakami, high procrastinators do
do not differ in their study behavior as much
as they do on anxiety.71

Although there is strong evidence of
a relationship between academic procras­
tination and library anxiety, it is unclear
whether it is a causal relationship. That
is, it is unclear whether academic procras­
tination is a cause of library anxiety or
whether library anxiety promotes acade­
mic procrastination. Perhaps it is most
likely that a bidirectional relationship ex­
ists between academic procrastination
and library anxiety, with each affecting
the other. If this is true, it would indicate
that academic procrastination and library
anxiety are intricately intertwined. For ex­
ample, it is possible that while engaged
in the research process, high-procrastinat­
ging graduate students experience extreme
elevations in library anxiety. Individuals
who experience increases in levels of li-
brary anxiety are more likely to postpone
using the library and performing library
tasks. In any case, this cycle of procrasti­
nation and library anxiety is likely to con­
tinue until levels of both are maximized.
Where for some students the procrastina­
tion component of the cycle is likely to
stem from a fear of failure, for others the
driving force is task aversiveness.

Several studies have indicated that some
academic procrastinators engage in perfec­
tionism in an effort to either produce a flaw­
less product (those with a tendency of self-
perfectionism) or impress others by their
efforts (those with a tendency of socially
prescribed perfectionism).72–75 In addition,
a relationship between perfectionism and
library anxiety has been reported by Jiao and
Onwuegbuzie.76 These findings, together
with the findings from the current study,
suggest that either the relationship between
academic procrastination and library anxi­
ety is moderated by levels of perfectionism
or the relationship between perfectionism
and library anxiety is moderated by levels
of academic procrastination. In any case,
future research should investigate the inter­
play between procrastination, perfection­
ism, and library anxiety.

The fact that no gender differences were
found in the present study with respect to
overall academic procrastination, fear of
failure, task aversiveness, and all five di­
mensions of library anxiety and the fact
that the overwhelming majority of previ­
ous research has documented that males
and females report similar levels of aca­
demic procrastination suggest that the
findings of the present study may be simi­
larly generalizable to both male and female
graduate students.77–80 However, male stu­
dents have been found to report higher lev­
els of library anxiety than female stu­
dents.81 Thus, it is unclear how generaliz­
able the findings of the present study are
across gender. If, indeed, males do experi­
ence higher levels of library anxiety than
do females, it is possible that the relation­
ship between academic procrastination
and library anxiety found in this study
would have been even stronger if more
males had been included in the sample.
The fact that academic procrastination was assessed via a self-report instrument, rather than based on actual behavior, is perhaps another limitation of the study because it is possible that students may give socially desirable responses. However, according to Rothblum, Solomon, and Murakami, self-reported procrastination has been validated against delay in taking self-paced quizzes, delay in submitting course assignments, delay in participation in psychology experiments, and lower course grades. Notwithstanding, future studies in this area should consider using behavioral measures of academic procrastination in addition to self-report instruments. In particular, qualitative studies are needed that investigate the role of academic procrastination through each of Kuhlthau’s six stages of the information search process because students are likely to procrastinate at one or more of these stages. Moreover, future research should determine the stage at which procrastination is most prevalent and debilitating.

**Conclusion**

To the extent that the findings of the present study are replicable, several practical implications can be derived. Perhaps most importantly, the results suggest that whereas some graduate students may benefit from traditional interventions for procrastination such as time management and study skills, self-discipline and self-criticism, compliance-based and defiance-based paradoxical strategies, and the use of external contingencies, others may benefit more from interventions that focus on anxiety management and reduction. Academic advisors and librarians should combine their efforts in helping to reduce library anxiety among graduate students by teaching them how to direct attention away from self-centered worries when they are engaged in the library search process. By using such interventions, it is hoped that more graduate students will be positive about using the library, in general, and about the information search process, in particular.

**Notes**

6. Ibid.
17. Ibid.
20. Ibid.
28. Rothblum, Solomon, and Murakami, “Affective, Cognitive, and Behavioral Differences between High and Low Procrastinators.”
30. Rothblum, Solomon, and Murakami, “Affective, Cognitive, and Behavioral Differences between High and Low Procrastinators.”
40. Ibid.
41. Ibid.
42. Ibid.
43. Beswick, Rothblum, and Mann, “Psychological Antecedents of Student Procrastination.”
44. Solomon and Rothblum, “Academic Procrastination.”
45. Ferrari, “Reliability of Academic and Dispositional Measures of Procrastination.”
53. Thompson, “Canonical Correlation.”
54. Ibid.
56. Thompson, “Canonical Correlation.”
57. Ibid.
58. Thompson, Canonical Correlation Analysis.
59. ———, “Canonical Correlation Analysis.”
60. ———, “Variable Importance in Multiple Regression and Canonical Correlation” (paper presented at the annual meeting of the American Educational Research Association, Boston, Apr. 1990 [ERIC ED 317 615]).
62. Thompson, “Variable Importance in Multiple Regression and Canonical Correlation.”
67. Rothblum, Solomon, and Murakami, “Affective, Cognitive, and Behavioral Differences between High and Low Procrastinators.”
68. Solomon and Rothblum, “Academic Procrastination.”
69. Rothblum, Solomon, and Murakami, “Affective, Cognitive, and Behavioral Differences between High and Low Procrastinators.”
70. Solomon and Rothblum, “Academic Procrastination.”
71. Rothblum, Solomon, and Murakami, “Affective, Cognitive, and Behavioral Differences between High and Low Procrastinators.”
73. Onwuegbuzie, “Writing a Research Proposal.”
75. Solomon and Rothblum, “Academic Procrastination.”
77. Effert and Ferrari, “Decisional Procrastination.”
78. Ferrari, “Reliability of Academic and Dispositional Measures of Procrastination.”
79. Ferrari, “A Preference for a Favorable Public Impression by Procrastinators.”
80. Ferrari, “Procrastinators and Project Creation.”
82. Rothblum, Solomon, and Murakami, “Affective, Cognitive, and Behavioral Differences between High and Low Procrastinators.”
83. Solomon and Rothblum, “Academic Procrastination.”
84. Esther D. Rothblum, Gery Beswick, and Leon L. Mann, “Psychological Antecedents of Student Procrastination” (unpublished manuscript, Flinders Univ. of South Australia, Adelaide, 1984).
86. ———, “Inside the Search Process.”
94. Rothblum, Solomon, and Murakami, “Affective, Cognitive, and Behavioral Differences between High and Low Procrastinators.”