Graduate Student Self-efficacy and Anxiety toward the Dissertation Process

A sample report for the mini-research project for
EDUR 9131 Advanced Educational Research

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Self-efficacy, briefly described, refers to an individual’s judgment about his or her ability to accomplish a given task or activity. An individual’s level of self-efficacy is thought to relate to the individual’s choice of activities, effort in the activity, and perseverance in the activity (Bandura, 1977). Thus, self-efficacy, through its impact on behavioral choice, the extent of effort, and persistence when facing difficulties, influences performance behavior as well as psychological functioning (Bandura, 1997). This latter linkage suggests that self-efficacy may influence various psychological constructs, of which one would be anxiety. Anxiety is reflected by an individual’s disposition to react in certain ways to situations judged stressful or dangerous (Stipek, 1998). The more anxious one becomes when facing a stressful situation, the more intense will be one’s reactions.

In the academic domain, research has demonstrated strong relationships among various dimensions of self-efficacy and anxiety (Shelton & Mallinckrodt, 1991), however, the majority of research on self-efficacy has focused on the various specific forms of academic self-efficacy, such as mathematics self-efficacy, reading self-efficacy, and a host of others (Pajares, 1996; 2002). The same is true for research on anxiety in education. Such research is usually limited to populations of K-12 students or undergraduate college students, and to the area of testing behavior (Spielberger & Vagg, 1995). One area that has received relatively no study is the dissertation process, which includes, for example, the formation of a committee, the selection of a worthy research idea, development and defense of a prospectus, collecting and analyzing data for the research, writing the dissertation, and defending the dissertation before a committee.

The purpose of this study was to determine whether the constructs of self-efficacy and anxiety extend to the dissertation process in a manner similar to other academic domains, and to learn which aspects of the dissertation process produce differing levels of anxiety and confidence for doctoral students. The findings of this study are important for a number of reasons. Determining of the applicability of self-efficacy and anxiety theories toward the dissertation process for doctoral students will help extend research, and generalize theory, on these two constructs by providing an examination of a seldom studied group of students. Further, by eliciting feedback from doctoral students about which aspects of the dissertation process create various levels of stress and confidence, a picture may emerge which helps explains why so many students fail to complete the dissertation and why only about 50% of doctoral students persevere through the dissertation (Lovitts & Nelson, 2002).
Self-efficacy, which can be understood to represent self-perceptions of one’s ability to perform a given task (Bandura, 1989), is an important factor in determining and predicting much of human behavior (e.g., Hackett & Betz, 1989; Lopez & Lent, 1992; Pajares & Miller, 1994). The significance of self-efficacy has been demonstrated by showing, empirically, that it is related to a number of important psychological constructs such as self-concept (Lent, Brown, & Gore, 1997), self-esteem (Woodruff & Cashman, 1993), depression (Ehrenberg, Cox, & Koopman, 1991; Kanfer & Zeiss, 1983), and assertiveness (Lee, 1984). In addition to these correlates of self-efficacy, one factor that corresponds with low self-efficacy is high anxiety (Bandura, 1997). Indeed, research on both test anxiety and various academic domains of self-efficacy consistently show that a negative relationship is found (e.g., Hembree, 1988; Schwarzer, Bährler, Kwiatek, Schröder, & Zhang, 1997; Shelton & Mallinckrodt, 1991). Thus, this research suggests that when faced with fearful, threatening, or stressful situations, individuals often react by expecting failure, which by definition means that a lowered self-efficacy in the threaten domain results.

Education literature is replete with studies of test anxiety and the effects that high levels of anxiety have on student performance due to emotional and physiological reactions to stressful testing situations (e.g., Hembree, 1988; Hill & Wigfield, 1984; Plass & Hill, 1986). Typically test anxiety is caused by a lack of preparation for the given test, and by worry, which may stem from thoughts of past poor performances, how friends are performing, and concern over consequences for failing (Spielberger & Vagg, 1995). However, like self-efficacy, little empirical, published attention has been directed to the anxiety and trepidation some doctoral students experience when faced with the dissertation experience. For example, the University of Texas at Austin (UTA) regularly holds workshops to help graduate students work through the dissertation process (Sanford, 1999). Notes Rick Cherwitz, Associate Dean of Graduate Studies at UTA: “Students are often frightened and intimidated by the dissertation looming at the end of their graduate school career” (Sanford, 1993).

Similarly, McGrath (2002) notes that fear and anxiety are often the causes of students failing to complete their dissertations. Indeed, others who have experienced the dissertation process have acknowledged the apparent link between anxiety and procrastination toward the dissertation as well (e.g., Carbonell, 2000; Ebeltoft-Kraske, 1996). Such behavior is consistent with self-efficacy theory. According to Bandura (1977), self-efficacy is an especially important factor in determining one’s perseverance and eventual success in academic activities. Thus, students with more confidence in their abilities to perform the dissertation task are less likely to react in a detrimental way to stress related to the dissertation process, have less trepidation for the dissertation, and are therefore more likely to
demonstrate greater perseverance on the dissertation. For doctoral studies, perseverance is cited as one of the key attributes for graduate students (Lyle, 2001; Office of Doctoral Programs, n.d.) and is often a factor that applicants and their references must assess for applications to doctoral study (School of Information, n.d.).

It is clear that academic self-efficacy and various forms of academic anxiety are related (Bandura, 1997; Hembree, 1988), and it is also evident that many people believe that some students face considerable anxiety toward the dissertation process (e.g., McGrath, 2002; Sanford, 1993). Given both the empirical evidence and the theoretical predictions for a negative linkage between efficacy and anxiety, it seems possible that such a negative relationship could exist for the academic exercise of the dissertation as well. The purpose of this study was to empirically examine the possible relationship between self-efficacy and anxiety toward the dissertation, and to learn whether this relationship was negative and thus conforms to the preponderance of empirical studies examining efficacy and anxiety. Furthermore, the precise aspects of the dissertation process that result in confidence and concern were explored to help explain where the process creates impediments for doctoral students. To do this, respondents were asked to identify in which aspects of the dissertation process they were either confident or concerned.

Method

Participants

The participants for this study consisted of 28 Educational Administration doctoral students enrolled in three sections of an advanced educational research course taught at a medium sized (14,500 students), regional university in the southeastern United States. These students are predominately White (89.3%) and female (78.6%).

Instrumentation

Drawing from a number of published instruments designed to measure test anxiety and/or self-efficacy (Pintrich, Smith, Garcia, & McKeachie, 1991; Ritschof & Griffin, 2001; Sarason, 1972), items were selected and revised to address the issues of doctoral student anxiety and efficacy regarding the dissertation process. In total, ten items were developed, five items to assess level of anxiety toward the dissertation, and five to measure level of efficacy toward the dissertation. For anxiety, three items reflected the emotionality aspect of anxiety (e.g., heart beating fast) and two assessed the worry dimension of anxiety (e.g., concern for performance). For each of the anxiety and efficacy items, students responded on a Likert scale, which ranged from a low of 1 (not at all true of me) to a high of 7 (very true of me). With this scaling, higher scores indicate higher levels of anxiety and higher levels of efficacy.

In addition to the structured items presented above, two open-ended items were also included to
assess better those factors in the dissertation process that create stress and confidence for students. Specifically, the questions were: “Which aspects of the dissertation process do you most fear or are most concerned about? Please explain why you fear or are concerned about each aspect you identify,” and “Which aspects of the dissertation process are you most comfortable with or confident about? Please explain why you are comfortable or confident with each aspect you identify.” Demographic questions regarding sex, race, and years of absence from college since the respondent’s last degree were also included. The instrument is presented in the Appendix.

Content validity for the structured anxiety and efficacy items was addressed in several methods. First, when constructing the items, dimensions of anxiety and efficacy were identified in the literature (e.g., Bandura, 1996; Spielberger & Vagg, 1995) and corresponding items were written for each. Second, items from other instruments (Pintrich, Smith, Garcia, & McKeachie, 1991; Rittschof & Griffin, 2001; Sarason, 1972) designed to measure a related form of anxiety (e.g., test anxiety) and general academic self-efficacy were reviewed. Wording from several of these instruments was used where possible to help ensure consistency with other researchers’ construction and views of anxiety and self-efficacy, although alterations were needed in each case to adapt the items to the dissertation domain studied here. Third, once a complete draft of the instrument was developed, two experts in educational psychology who were familiar with research in anxiety and self-efficacy were asked to review the items and provide feedback for refinements. No revisions were made as a result of their reviews. Lastly, the instrument was pilot tested with one class of doctoral students. These individuals were asked to complete and critique the instrument, and to provide comments for needed alterations. Slight wording changes to the open-ended questions resulted from their input.

Using data from the sample of 28 students who completed the instrument, Cronbach’s alpha (Gall, Borg, & Gall, 1996) was calculated for both dissertation anxiety ($\alpha = .85$) and dissertation efficacy ($\alpha = .79$). As these number reveal, there was an acceptable degree of internal consistency in the responses to each set of items. Evidence for construct validity can be found in the correlation between anxiety and efficacy. As reported below in the results, the correlation between anxiety and efficacy was strongly negative, which is what one would expect theoretically (Bandura, 1997), and is consistent with other empirical investigations of the relationship between differing conceptualizations of anxiety and self-efficacy (e.g., Hembree, 1988). In addition to the correlation, sex differences in self-efficacy and anxiety have been demonstrated in prior research. Typically, such research shows that men tend to be more confident in their academic abilities (Pintrich & Schunk, 1996; Stipek, 1998), and less anxious toward academic activities (Stipek, 1998). The data in this study were consistent with these previous findings. Specifically, men scored ($M = 5.73$, $SD = 0.35$) higher on self-efficacy toward the dissertation than did women ($M = 5.40$, $SD = 0.92$), and lower ($M = 3.73$, $SD = 0.89$) on anxiety toward the
dissertation than women (M = 4.54, SD = 1.69). Finally, factor analysis was performed on the 10 items. No matter which extraction or rotation method employed, the items formed very clear and distinct factors and there was virtually no cross-loadings between the anxiety and efficacy items. Taken together, the evidence from the correlation between anxiety and efficacy, sex difference on efficacy, and the factor analysis provide strong support for the construct validity of the scores derived from this sample of students.

**Procedures**

The instrument was administered to doctoral students enrolled in an advanced educational research course. To prevent biasing students’ responses, the instrument was administered at the beginning of the first class session before any discussion of the course content was considered. Once the instrument was administered and completed, responses were collected and then class focus moved to more normal activities for a first class session (e.g., discussion of the syllabus, assignments, etc.). Students who arrived late, but before others had completed the instrument, were allowed to provide responses to the instrument, but students who arrived after instruments were collected were not allowed to participate in the survey.

Scores for both anxiety and efficacy toward the dissertation were formed by averaging responses on the Likert scales for each respondent on the respective five items for each construct. That is, the average response to items 1, 3, 5, 7, and 9 (see Appendix) formed the measure of efficacy, and the average response to items 2, 4, 6, 8, and 10 represented the score for anxiety. To analyze responses to the two open-ended items, codes were developed for each set of responses by seeking common themes among the responses. A code sheet was developed for each question and this code sheet was used to categorize each respondent’s answers to the two questions. To check for consistency in coding responses, a second coder participated, independently, in the coding process using the code sheet. Agreement between the author and the independent coder was 93%, and discrepancies were discussed until consensus was reached regarding the proper classification for the response in question.

**Results**

The first question of interest was whether anxiety and self-efficacy toward the dissertation followed the pattern found in research on other academic domains regarding efficacy and anxiety. The descriptive statistics for, and the correlation between, self-efficacy and anxiety are presented in Table 1. As the results of this analysis show, there is a strong negative correlation between self-efficacy and anxiety toward the dissertation experience. The negative relationship found here is consistent with both theoretical predictions and prior research (Bandura, 1996; Hembree, 1988). This finding suggests that students who are more confident in their ability to perform during the dissertation experience are less anxious than are students who are less confident.
Responses to the two open-ended questions are summarized and presented in Table 2. As this table shows, areas of the dissertation process that cause concern or anxiety vary, with no one area identified consistently by a majority of respondents. The most frequently identified areas of concern were (a) defense of the dissertation, (b) method/data collection, (c) topic selection, and (d) unknown process. Respondents who noted a concern for the defense of the dissertation typically indicated that they were worried about successful oral defense or presenting their dissertation before a committee of knowledgeable individuals. For example, two students wrote what perhaps summarizes the concern of many students:

“I am very nervous about being able to speak w/ knowledge during the defense.”

“I guess anyone would be weary when one has to answer questions asked by a committee.”

Respondents were also concerned that they lacked the training for methods of data collection, or that data collection would be a difficult process. Additionally, a number of respondents expressed concern that they would have a difficult time identifying a worthwhile topic, or narrowing their topic to something that was researchable and doable. In response to the question of which aspect of the dissertation process generates the most fear or concern, one student wrote:

“All of them! I know very little about the ‘entire’ or ‘big picture’ process. I would like to have someone fully explain it all step by step.”

This response is similar to the sentiment expressed by a smaller number of respondents. These individuals were anxious simply because of the unknown; that is, they did not fully understand the dissertation process and as a result, this caused anxiety for them. As another student stated:

“I fear the unknown—not understanding the procedures, requirements, etc. at this time do cause me anxiety.”
Only three areas garnered a number of responses when respondents were asked to identify areas in which they were confident of their success. The most frequently cited was that of writing the dissertation. Many respondents believe that they are very capable of writing their dissertation well enough to satisfy their committee. One respondent noted:

“We will and have been given many guidelines and help towards dissertation writing.”

Perhaps this explains why so many students in this program are confident with writing the dissertation. About a fourth of respondents were confident in their ability to defend their dissertation. For example, one student wrote:

“I am very confident about my presentation skills since I have experience in public speaking.”

Interestingly, the number of respondents who expressed confidence in their defense was about equal to the number of respondents who were concerned with the defense. Lastly, 25% of respondents stated that they were confident of their ability to perform an acceptable literature review. This is understandable since the literature review is often easily conducted given the computerized search procedures available.

Discussion

Results of this study were consistent with previous empirical investigations of anxiety and efficacy (Hembree, 1988; Schwarzer, Bäßler, Kwiatek, Schröder, & Zhang, 1997; Shelton & Mallinckrodt, 1991) in that a negative relationship was found. Further, this finding supports both self-efficacy and anxiety theories (Bandura, 1997; Spielberger & Vagg, 1995). Thus, the results of this study show that efficacy and anxiety theories apparently extend to the dissertation experience for doctoral students in a manner consistent with other academic endeavors. Given this, it may be possible to identify those aspects of the dissertation experience that cause high levels of anxiety and to address effectively any concerns doctoral students may have.

Respondents in this study noted that topic selection, data collection methods, and defense of the dissertation figured prominently in student concern. Given the small number (n = 6) of students who identified concern for topic selection, perhaps this potential problem can best be handled by identifying students having this problem and having these students speak with their advisor about possible research topics. Another possibility is for a listing of researchable topics to be generated by faculty with expertise in the program and disseminating this list to doctoral students. It should be expected that a number of students would be unsure of the data collection aspect of their dissertation since the data for this study
was collected at the outset of most students’ first research method course in their doctoral program of study. Another way of judging anxiety and concern for the dissertation experience would be to survey only students who have completed their coursework, but have yet to begin the dissertation. This procedure would enable one to judge better anxiousness over data collection methods, and would also provide a better estimate of the level of anxiety students hold toward the defense of the dissertation. Such fear could be handled by providing more information on the defense experience, and perhaps by inviting (or requiring) students to attend defenses of other students. It is possible that by addressing such concerns, the 50% dropout rate among doctoral students nationwide found by Lovitts and Nelson (2002) could be reduced significantly.
References


Table 1. Correlation and Descriptive Statistics for Dissertation Self-efficacy and Anxiety

<table>
<thead>
<tr>
<th></th>
<th>SE</th>
<th>DA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-efficacy (SE)</td>
<td>---</td>
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</tr>
<tr>
<td>Dissertation Anxiety (DA)</td>
<td>-.54*</td>
<td>---</td>
</tr>
<tr>
<td>M</td>
<td>5.47</td>
<td>4.36</td>
</tr>
<tr>
<td>SD</td>
<td>0.84</td>
<td>1.57</td>
</tr>
</tbody>
</table>

* p < .05.

n = 28
Table 2. Categorized Responses to Questions 11 and 12 (Identification of aspects of the dissertation process that create anxiety and confidence)

<table>
<thead>
<tr>
<th>Category of Response</th>
<th>Areas that Cause Anxiety</th>
<th>Areas of Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percentage of Times</td>
<td>Number of Times</td>
</tr>
<tr>
<td></td>
<td>Category Referenced</td>
<td>Category Referenced</td>
</tr>
<tr>
<td>Committee Formation/Activities</td>
<td>14.3</td>
<td>4</td>
</tr>
<tr>
<td>Dissertation (in general)</td>
<td>3.6</td>
<td>1</td>
</tr>
<tr>
<td>Writing</td>
<td>3.6</td>
<td>1</td>
</tr>
<tr>
<td>Topic Selection/Research Questions/Hypotheses</td>
<td>21.4</td>
<td>6</td>
</tr>
<tr>
<td>Literature Review</td>
<td>7.1</td>
<td>2</td>
</tr>
<tr>
<td>Method/Data Collection</td>
<td>28.6</td>
<td>8</td>
</tr>
<tr>
<td>Participants/Subjects</td>
<td>3.6</td>
<td>1</td>
</tr>
<tr>
<td>Materials/Instruments</td>
<td>7.1</td>
<td>2</td>
</tr>
<tr>
<td>Data Analysis/Statistics</td>
<td>7.1</td>
<td>2</td>
</tr>
<tr>
<td>Defense of Dissertation</td>
<td>32.1</td>
<td>9</td>
</tr>
<tr>
<td>Time Associated with Process</td>
<td>14.3</td>
<td>4</td>
</tr>
<tr>
<td>Unknown Process</td>
<td>17.9</td>
<td>5</td>
</tr>
<tr>
<td>Efficacy (or lack thereof) Toward Process</td>
<td>3.6</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>14.3</td>
<td>4</td>
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</tbody>
</table>

Note. The column “The Number of Times Category Referenced” represents a simple count of the number of times a specific category (e.g., committee formation/activity, dissertation (general), writing, etc.) was mentioned among the 28 respondents. This column may sum to more than 28 since multiple categories were often listed by each respondent.
Appendix

Dissertation Process Survey

Instructions

The purpose of the survey is to ascertain doctoral students’ feelings regarding the dissertation process. Your honest responses will help provide a better understanding of doctoral students’ levels of anxiety and confidence about the dissertation process that they will eventually face. In the context of this survey, dissertation process means the entire process the student experiences to construct and defend the dissertation. This includes, for example, developing the research idea, developing and defending the prospectus, collecting and analyzing data for the research, writing the dissertation, and defending the dissertation before a committee.

The following 10 statements refer to the dissertation process that you will soon experience. There are no right or wrong answers, so please answer as accurately as possible. Use the scale below to respond to each statement. If you think the statement is very true of you, circle 7; if the statement is not at all true of you, circle 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I believe I will do well on the dissertation.</td>
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<td>7</td>
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<tr>
<td>2. I feel uneasy or uncomfortable with the dissertation process as a whole.</td>
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<td>5</td>
<td>6</td>
<td>7</td>
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<td>3. I am confident that I can address even the hardest aspects of the dissertation process.</td>
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<td>7</td>
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<td>4. Thinking about the upcoming dissertation process makes me feel anxious.</td>
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<td>5</td>
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<td>5. The process of writing and defending the dissertation may be difficult or hard, but I think I will be successful anyway.</td>
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<td>6</td>
<td>7</td>
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<td>6. I am worried about how well I will do during the dissertation defense.</td>
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<td>6</td>
<td>7</td>
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<td>7. I know that I have learned the literature and theories that will be necessary to report in the dissertation.</td>
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<td>5</td>
<td>6</td>
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<tr>
<td>8. I feel my heart beating faster as I start to think about the dissertation.</td>
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<td>5</td>
<td>6</td>
<td>7</td>
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<tr>
<td>9. I am sure that I will be able to answer some of the more challenging or difficult questions posed by the dissertation committee.</td>
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<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
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<tr>
<td>10. Thinking about the consequences of failing some component of the dissertation process makes me uptight.</td>
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<td>5</td>
<td>6</td>
<td>7</td>
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Open-Ended Responses

For items 11 and 12, please provide honest, thoughtful responses. If space does not permit a full response, please continue your response on the back of this paper.

11. Which aspects of the dissertation process do you most fear or are most concerned about? Please explain why you fear or are concerned about each aspect you identify.
12. Which aspects of the dissertation process are you most comfortable with or confident about? Please explain why you are comfortable or confident with each aspect you identify.

### Demographics

35. Sex  
   - ___ Female  
   - ___ Male  

36. Race / Ethnicity  
   - ___ Asian  
   - ___ Black/African-Amer.  
   - ___ Hispanic  
   - ___ White  
   - ___ Other (please identify in the space below)  

37. How many years has it been since you received your last college degree?  
   - ___ 0-1  
   - ___ 2-3  
   - ___ 4-5  
   - ___ 6-7  
   - ___ 8-9  
   - ___ 10 or more  

__________________________