Counselor Education Students' Fear in Online and Traditional Research Courses

Julia A. Davis
SUNY Plattsburgh, jdavi004@plattsburgh.edu

Follow this and additional works at: https://repository.wcsu.edu/jcps

Part of the Higher Education Commons, Other Social and Behavioral Sciences Commons, and the Student Counseling and Personnel Services Commons

Recommended Citation

This Article is brought to you for free and open access by WestCollections: digitalcommons@wcsu. It has been accepted for inclusion in The Journal of Counselor Preparation and Supervision by an authorized editor of WestCollections: digitalcommons@wcsu. For more information, please contact ir@wcsu.edu.
Counselor Education Students' Fear in Online and Traditional Research Courses

Abstract
Two sections of research methods were offered to Master's level Counselor Education students during the same semester; one section was a traditional classroom setting and the second section was a web/hybrid course. Students were surveyed about their fears surrounding the academic requirements of a research methods course and fears about the type of instruction for the course at the beginning and at the end of the class. Data showed that students in the web-hybrid course indicated higher levels of fear than the students in the traditional classroom setting. Implications for counselor educators include normalizing the fear associated with the academic requirements of a research methods class and acknowledging the fear students may have about using an online learning platform.

Keywords
anxiety and fear, online learning, research methods class, graduate students
It is the opinion of this counselor educator that many master’s level counselor education students balk at the idea of taking their required research methods courses. A good portion of this reluctance may come from a fear of the subject matter and some of the dislike seems to stem from a lack of appreciation of the further need of the subject matter in a professional setting. Adding a different instructional style involving online learning will likely increase these aversions towards research methods classes. For the purpose of this study, the terms fear and anxiety are synonymous.

Research supports the idea that students are anxious about learning research methods (Murtonen, 2005; Murtonen & Lehtinen, 2003; Onwuegbuzie & Daley, 1999; Onwuegbuzie & Wilson, 2003; Papanstasiou & Zembylas, 2008; Wagner et al., 2011). As stated above, there are several possible reasons for this anxiety. Studies have shown that many students shy away from research methods courses due to a strong fear of the math and statistics required (Mji, 2009; Onwuegbuzie et al., 1997; Rancer et al., 2013). Students do not feel they have the basic mathematical abilities to successfully learn statistical calculations or even to obtain the competencies to understand the statistical results reported in academic journal articles (Pan & Tang, 2005; Walsh & Ugumba-Agwunobi, 2002).

Students from many different professional fields, such as journalism and education, do not readily see the value of learning research methods (Guglietti, 2015; Hampden-Thompson & Sundaram, 2013). Professional counselors have been shown to not see the value of learning or utilizing research methods as a part of their careers (Bauman, 2004). In the experience of this instructor, many counseling students disengage from learning research methods as they do not see a direct link to their future chosen careers. Students do not think they will need the knowledge or skills learned in a research methods course after they graduate from their programs. Linking
learning to future practice may help students become more invested in acquiring research methods skills.

Online learning can be its own stress-inducing factor for graduate students. Sun, Tsai, Finger, Chen and Yeh (2008) defined online learning as, “the use of telecommunication technology to deliver information for education and training,” (p. 1183). The availability of online classes has grown tremendously since the late twentieth century (Allen & Seaman, 2007). Individuals’ attitudes toward technology represented much of the research on feelings about online learning (Bhattacherjee, 2001; Davis et al., 1989; Piccoli et al., 2001; Wu et al., 2006). Research has shown that students’ anxiety about technology has had a vital impact on their satisfaction of the learning experience (Sun et al., 2008).

Research results on attitudes about learning, comparing online learning to traditional classroom instruction are mixed. Several studies showed no statistically significant difference in attitudes when comparing online/hybrid learning to traditional classroom environments (Bernard et al., 2004; Sitzmann et al., 2006; Zhao et al., 2005). Students learning research methods or statistics in an online class felt more anxiety than their traditional classroom counterparts (DeVaney, 2010; Dinauer, 2012). Conversely, Marchand and Gutierrez (2012) found that the anxiety experienced by research methods graduate education students was limited in an online setting as opposed to a traditional classroom environment. With these differing results, more research into students’ anxiety about learning research methods both online/hybrid and in traditional classroom settings is needed.

Combining the fear of research methods as a topic, the lack of knowledge of the usefulness of the research methods course material, and further adding an online teaching format to the research methods course could have increased the anxiety levels of counselor education graduate
students taking the research methods course. The purpose of this study was to explore the levels of anxiety experienced by counselor education graduate students and the opinions of these students regarding the usefulness of the subject matter in a traditional classroom environment and in a web-hybrid course.

**Research Questions**

1. Does the type of instruction (traditional classroom vs. web-hybrid) have an impact on the anxiety levels of counselor education graduate students taking a required research methods course?

2. Does the type of instruction (traditional classroom vs. web-hybrid) have an impact on the opinions about a required research methods course for counselor education graduate students?

**Participants**

The subjects in this study (n=27) were master’s level counselor education students at a mid-sized state institution located in the northeastern United States. One three-credit research methods course was required of all students in this particular CACREP accredited program. Five of the participants were male and 22 were female.

The counselor education students included in this study came from specializations in mental health counseling (18), school counseling (7), and student affairs counseling (2). The majority of the participants (16) had earned undergraduate degrees in psychology and all but one participant had previously taken a research methods course as part of their undergraduate programs.

Participants in this study were registered for their required research methods courses during the Spring, 2010 semester. Students self-selected their section of the course. Fourteen students
attended the traditional weekly class throughout the semester and thirteen chose the web-hybrid section of the course.

**Method**

Prior to registration for the Spring, 2010 semester, counselor education graduate students were informed that one of the two sections of the required research methods course would be offered as a web-hybrid class. This offering was in response to needs expressed by many students who were concurrently completing their internship hours at sites located far from campus. Permission to conduct this research study was obtained from the institution’s Committee for the Protection of Human Subjects, which is the college’s Institutional Review Board.

The traditional and web-hybrid sections of the research methods course were taught by the same instructor and were comprised of the same requirements. Students in both sections were evaluated on class participation, a written annotated bibliography, objective mid-term evaluation exams, and scores on a final research proposal paper and presentation. The weekly readings and discussion questions were identical for both sections of the course. Students in both sections viewed identical power point presentations; the traditional section students saw and heard the lectures during class and the web-hybrid section students were able to view the slide shows with audio-recorded lectures by the instructor. Class participation for the traditional class was graded through observation of students during full-class and small-group discussion sessions. Participation for the web-hybrid students was evaluated by reviewing the number and quality of postings on the weekly discussion boards. Students in class and online were given the same discussion questions each week. Students in both sections presented their final papers to their peers in the final class meetings.
The web-hybrid course section met three times during the semester. The first meeting occurred during the first week of classes for introductions, course requirements, and discussion about the course subject matter. The class met for the second time in the middle of the semester to discuss the required annotated bibliographies. This class meeting involved only class discussions. The final class meeting was held at the end of the semester for students to formally present their final research proposal papers to their peers. Readings from the text and research articles, questions and discussions, and the midterm exam were all facilitated in an online format. While the online portions of the course did not occur in real time, students were given exact due dates for discussion board posts.

The first course meeting for both classes met in a classroom format to discuss course requirements and expectations. In this first class meeting, students were asked to complete a survey about their feelings towards research methods classes. Students were asked again at the final class meeting complete the same survey. In the verbal explanation of the survey, the instructor asked that the students think of the terms fear and anxiety as the same feeling. Questions on the 5-point Likert-scale survey (see Appendix) asked students to indicate their levels of fear about different aspects of the research methods course, such as: math requirements, writing expectations, and workload amount. For anonymity, students were asked to list the last 3 digits of their student identification numbers rather than their names. Students were also asked to gauge their feelings about the importance of learning about research methods for their graduate school requirements and future professional careers. The survey was created by the author for this study. While the subjects remained anonymous, the surveys were paired through demographic data answers to determine any impact the course may have had on students’ responses. Responses to the surveys were then entered into SPSS for statistical analysis.
Results

Internal reliability for the Likert scaled instrument was conducted using Cronbach’s Alpha. The Cronbach’s Alpha for internal consistency was 0.732. The Cronbach’s Alpha based on standardized items was 0.669. Calculations were made to determine if the internal reliability would increase if any of the individual items were removed from the instrument. Two items resulted in a higher Cronbach’s Alpha. The item “this subject is vital to my success in graduate school” yielded a score of 0.784, and the item “this subject is vital to my success in my future profession” resulted in a score of 0.781. Overall, the instrument could be said to have average internal consistency.

Mean scores for the Likert scales on the pre- and post-surveys were calculated and shown in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Survey impact statement or question</th>
<th>Traditional Pre-survey</th>
<th>Traditional Post-survey</th>
<th>Web-hybrid Pre-survey</th>
<th>Web-hybrid Post-survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>A research methods course creates fear for me.</td>
<td>3.21</td>
<td>2.71</td>
<td>2.85</td>
<td>2.92</td>
</tr>
<tr>
<td>The math involved in this course creates fear.</td>
<td>2.79</td>
<td>2.29</td>
<td>2.92</td>
<td>2.69</td>
</tr>
<tr>
<td>The writing involved in this course creates fear.</td>
<td>2.92</td>
<td>2.14</td>
<td>2.62</td>
<td>3.08</td>
</tr>
<tr>
<td>The work amount creates fear.</td>
<td>3.43</td>
<td>2.43</td>
<td>3.00</td>
<td>3.08</td>
</tr>
<tr>
<td>Does the teaching method of your section create fear?</td>
<td>2.00</td>
<td>1.79</td>
<td>3.23</td>
<td>2.69</td>
</tr>
<tr>
<td>The teaching method of this course will impact my learning.</td>
<td>3.64</td>
<td>3.43</td>
<td>3.15</td>
<td>3.00</td>
</tr>
<tr>
<td>This subject is vital to my success in graduate school.</td>
<td>4.14</td>
<td>3.86</td>
<td>4.08</td>
<td>3.69</td>
</tr>
<tr>
<td>This subject is vital to my success in my future profession.</td>
<td>3.93</td>
<td>3.86</td>
<td>3.85</td>
<td>3.54</td>
</tr>
</tbody>
</table>

From mean scores shown in Table 1, one can see that students in the traditional class had higher mean scores than the students in the web-hybrid course when asked at the beginning of the semester about fear created by a research methods course, the writing involved in the course, and the work amount required for the course. Students in the web-hybrid section reported higher rates
of fear at the beginning of the course in the areas of the math involved in the course and the teaching method of the course. At the end of the course, students in the traditional class section had lower levels of fear for all questions than did the students in the web-hybrid section.

In the survey, students were asked about the importance of research methods for their success in graduate school and in their future careers. Results from the survey showed similar patterns for both questions regarding the importance of research methods for success in graduate school and counseling careers. Students in both sections reported less agreement that the research methods subject matter was vital to their success in graduate studies and in their future careers after completing the course.

ANOVAs were performed to gauge if there were statistically significant differences between the traditional and web-hybrid students’ mean scores in pre-tests and post-tests. The only statistically significant difference was found in the pre-test scores for the question on the teaching method of the course creating fear; there were no statistically significant findings in the post-test scores. The ANOVA results can be found below in Table 2.

Table 2

<table>
<thead>
<tr>
<th>Survey impact statement or question</th>
<th>F-value</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A research methods course creates fear for me.</td>
<td>0.71</td>
<td>0.407</td>
</tr>
<tr>
<td>The math involved in this course creates fear.</td>
<td>0.08</td>
<td>0.784</td>
</tr>
<tr>
<td>The writing involved in this course creates fear.</td>
<td>0.55</td>
<td>0.465</td>
</tr>
<tr>
<td>The work amount creates fear.</td>
<td>1.05</td>
<td>0.315</td>
</tr>
<tr>
<td>Does the teaching method of your section create fear?</td>
<td>10.50</td>
<td>0.003</td>
</tr>
<tr>
<td>The teaching method of this course will impact my learning.</td>
<td>2.38</td>
<td>0.135</td>
</tr>
<tr>
<td>This subject is vital to my success in graduate school.</td>
<td>0.04</td>
<td>0.835</td>
</tr>
<tr>
<td>This subject is vital to my success in my future profession.</td>
<td>0.06</td>
<td>0.806</td>
</tr>
</tbody>
</table>

*p < .01

The results of the ANOVA showed statistical significance only for the question, “Does the teaching method of your section create fear?” As the ANOVA calculations showed little difference
between the traditional classroom students and the web-hybrid students’ feelings about fear and their research methods course, this researcher became interested in learning if the course itself would make a difference in the levels of students’ fear about research methods. Tests of between-subjects effects were also calculated using Type III Sum of Squares looking for interactions between the type of class and the variables: sex, previous research methods course and current program of study, and no statistically significant differences were found.

The pre-test and post-test means were compared using a t-test with a significance level of p<.05. The results are listed in Table 3. Two statements resulted in statistical significant results: (1) the work amount creates fear and (2) this subject is vital to my success in graduate school. Both of these results were significantly lower in the post-test scores.

Table 3

<table>
<thead>
<tr>
<th>Survey impact statement or question</th>
<th>Pre-test Mean scores</th>
<th>Post-test Mean scores</th>
<th>t-score</th>
<th>Sig. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A research methods course creates fear for me.</td>
<td>3.04</td>
<td>2.81</td>
<td>0.71</td>
<td>0.484</td>
</tr>
<tr>
<td>The math involved in this course creates fear.</td>
<td>2.85</td>
<td>2.48</td>
<td>1.72</td>
<td>0.096</td>
</tr>
<tr>
<td>The writing involved in this course creates fear.</td>
<td>2.78</td>
<td>2.59</td>
<td>0.67</td>
<td>0.51</td>
</tr>
<tr>
<td>The work amount creates fear.</td>
<td>3.22</td>
<td>2.74</td>
<td>2.16</td>
<td>.040*</td>
</tr>
<tr>
<td>Does the teaching method of your section create fear?</td>
<td>2.59</td>
<td>2.22</td>
<td>1.38</td>
<td>0.178</td>
</tr>
<tr>
<td>The teaching method of this course will impact my learning.</td>
<td>3.41</td>
<td>3.22</td>
<td>0.68</td>
<td>0.503</td>
</tr>
<tr>
<td>This subject is vital to my success in graduate school.</td>
<td>4.11</td>
<td>3.78</td>
<td>2.08</td>
<td>.047*</td>
</tr>
<tr>
<td>This subject is vital to my success in my future profession.</td>
<td>3.89</td>
<td>3.7</td>
<td>1.04</td>
<td>0.306</td>
</tr>
</tbody>
</table>

*p<.05 in a two-tailed test

Limitations

The sample size for each group studied was rather small, 13 and 14 in a section, and may have had an impact on statistical significance. Although attempts were made to make both sections of the course the same, equality could not be guaranteed. Students self-selected their class sections; the
groups may have gravitated towards the section which best met their most comfortable form of instruction. The data in this study were also collected eight years ago; ease and familiarity with technology since that time may have had an impact on students’ attitudes towards online learning.

After reviewing the results, the survey instrument and data collection method may have had an impact on the data. Subjects may not have been able to marry the terms fear and anxiety. Some students may have felt anxious about parts of the course, but not afraid. This would have led them to not indicate a higher level of fear on their surveys. The structure of the survey may have also provided differing results. The only statistically significant finding using an ANOVA was for the one statement worded as a question. In future research, all survey statements should be worded in the same format to avoid any confusion. Also, in future research, statements regarding usefulness of the topic should not be measured using a fear/anxiety scale.

**Discussion**

When asked if parts of a research methods course instilled fear, graduate student subjects in this study indicated average levels of fear. The Likert-scale survey in the study asked participants to indicate their feelings about their research methods class with 1 indicating no fear at all to 5 indicated the subject was extremely fearful. Mean scores for the participants in the pre-test questions related to fear about the research methods course ranged from 2.0 to 3.64. For the post-test, averages were 1.79 to 3.43.

The statistical significance found in the study showing fear about the course section attending (traditional vs. web-hybrid) answers the first research question of this study and makes sense anecdotally. Students in the web-hybrid course had statistically significantly more fear than those attending in a traditional classroom in the pre-test surveys. These findings support research results of others indicating a fear of online learning (DeVaney, 2010; Dinauer, 2012). After
completing the semester, the results indicated that the type of instruction no longer differed significantly between web-hybrid and traditional classroom students’ fear. The majority of students in the web-hybrid section of the course had never been exposed to an online class. Previous research has indicated that the online learning platform may have an impact on the satisfaction and feelings about a college course (Sun et al., 2008). For the subjects in this study, the experience of successfully completing an online course may have contributed to their lowered levels of fear about the course.

Other than the fear related to the type of instruction in the class, the results of the study show no statistically significant differences in opinions about the students’ research methods class. These findings differ from those of Marchand and Gutierrez (2012), who found that the emotions of students in an online research methods course versus those in classroom settings differed when related to the usefulness of the subject matter for their careers. In this study, the two groups of students did not differ in their levels of anxiety based on the usefulness of research methods to their future careers.

To determine how the subjects felt about their required research methods course, paired sample t-tests were performed. Statistically significant results were found regarding the amount of work required in the course and that the course was vital for their success in graduate school (see Table 3). These results were collective and did not differentiate between the web-hybrid and traditional classroom groups. The level of fear from pre-test to post-test dropped for the students in the traditional group, but was slightly higher for those in the web-hybrid section (see Table 1). The overall statistically significant result is likely due to the work being completed and no longer being seen as something to fear. The same explanation could be said for the subject being vital to
success in graduate school; as the course was complete, the amount of anxiety or fear regarding the course having an impact on the success in graduate school would decrease.

It is notable in reviewing the results, that the post-test scores for the web-hybrid students were higher than the pre-test scores on three statements. These statements were: (1) a research methods course creates fear for me, (2) the writing involved in this course creates fear, and (3) the work amount creates fear. This instructor/researcher speculates that some of this difference may have to do with the web-hybrid course itself. While the traditional classroom students attended class each week and were graded on verbal participation, the web-hybrid students were required to engage in written discussion posts each week in addition to the required written assignments. As such, the web-hybrid students did have more written work required than their counterparts in the traditional classroom setting. The increased written work may have also led to the overall increase in fear of a research methods course seen in the results.

After reviewing the results of the surveys, this researcher was most intrigued by the lower mean scores from the subjects when asked if the content of the research methods course was important in their future careers; the scores for both groups were lower at the end of the course. This could be due to the wording of the question, “the subject is vital to my success in my future career.” The students may not have seen the research methods skills as “vital,” but may still have viewed them as important for their future work as professional counselors. Also, having the question rated on the fear/anxiety scale may have had an impact on the answers from the subjects. In a recent study on undergraduate research methods students in the United Kingdom, researchers found that having students write reflective essays contributed to several positive learning outcomes, including an increased appreciation of the usefulness of research methods in their future
careers (Hosein & Rao, 2017). This instructional method could easily be adapted in an online format as a short assignment or discussion post question.

**Recommendations for Future Research**

As this study had such a limited sample size, a replicate study with a robust sample would be recommended. A larger sample could be disaggregated to show possible differences between sex, age, or specific program track within the department. This study focused on graduate students at the master’s degree level; similar results may be found if doctoral students were included in a future study. This study supported the idea that graduate students feel fear and anxiety about research methods courses, especially in online courses. Asking similar questions of students enrolled in fully-online or web-hybrid programs could produce vastly different results. As mentioned above as a limitation, it would be recommended to use or develop a norm-referenced instrument on fear and anxiety about learning research methods in either traditional classroom settings or using online or web-hybrid instruction.

**Implications for Practice**

Counselor Education master’s level students do feel fear and anxiety about taking required research methods classes. Putting that class in an online learning environment increased levels of fear for most students. This instructor and researcher recommends first acknowledging the fear of research methods and online courses with students. Then, instructors can utilize the knowledge and skills inherent as a counselor educator to help mitigate as many of the students’ fears as possible.

Results also indicated a lack of connection between a research methods class and future career success. These findings were similar for traditional classroom students as well as web-hybrid students. Since conducting this study, the instructor/researcher has made a point of tying
research methods to future success in counseling practice through the use of the review of carefully selected research articles on timely, targeted counseling topics and probative questions about ties to future counseling practice.

**Conclusion**

This study supports the idea that Counselor Education students feel fear regarding their required research methods courses. Students taking research methods in a web-hybrid format indicated greater amounts of fear than students in a traditional classroom setting. Students in both traditional and web-hybrid courses did not link learning research methods to their future success as professional counselors.


Appendix

Research Methods Survey

Please list the last four digits of your student ID number: ________________

Research Methods class section:

_____ In-class section  _____ Web-hybrid section

Sex:

_____ Female  _____ Male

Current counseling grad program:

_____ Mental Health  _____ School  _____ Student Affairs

Undergraduate Major: ________________________________

Did you take a Research Methods class during your undergraduate program?

_____ Yes  _____ No

Using the scale below, please indicate your current feelings about your Research Methods class.

1 = I have no fear at all
2 = I have very little fear
3 = I have some fear
4 = I am quite afraid
5 = I am extremely afraid

Please circle the number that best describes your current feelings for each statement:

A research methods course creates fear for me. 1 2 3 4 5
The math involved in this course creates fear. 1 2 3 4 5
The writing involved in this course creates fear. 1 2 3 4 5
The work amount creates fear. 1 2 3 4 5
Does the teaching method of your section create fear? 1 2 3 4 5
The teaching method of this course will impact my learning. 1 2 3 4 5
This subject is vital to my success in graduate school. 1 2 3 4 5
This subject is vital to my success in my future profession. 1 2 3 4 5