

## **EDD 606 Quantitative Research Methods**

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### **Introduction**

This course will introduce educational leaders to concepts in quantitative research in preparation for conducting independent research. This course will enable students to critically understand quantitative research methodology and apply it appropriately to various educational issues.

### **Course Objectives:**

Students will be able to:

- Demonstrate their understanding of major research methods and their ability to make use, and interpret the results, of quantitative research techniques
- Identify and conduct the appropriate techniques for different kinds of research questions using SPSS
- Apply their understanding of quantitative research methods in relation to contemporary issues in education
- Critically assess the utility and appropriateness of different quantitative methods and techniques for the study of relevant research issues in education.

### **Course Standards**

1. You are required to attend all classes, to read all appropriate assignments before each class meeting, and to participate in class discussions. Due to the class format, it is not possible to pass the course if you miss more than eight hours of class. Make-up assignments for missed class time must be arranged with the professor. Incompletes may be given in the case of an emergency if arranged before grades are due.
2. All written work is expected to meet standards of academic and professional quality.
3. All written assignments must be of graduate-level quality. Your grade will consider the quality of your writing and presentation. Pay careful attention to spelling, grammar, and punctuation. Hint: Have someone proofread your work before you turn it in. Unless so stated, all written assignments must be typed, double-spaced, on one side of the page using 12 point font. All page limits must be observed. The quality of your work and adherence to these guidelines will be considered in your final grade. If an assignment is turned in late without prior arrangements with the instructor, you will lose five points for each late paper. The dates included in the syllabus are tentative and will stand if not changed in class.

### **Course Assignments:**

1. Dissertation Prospectus: Each candidate will develop, articulate, and defend a prospectus for a professional research study exploring a clearly defined aspect of educational leadership practices, policies, reforms, or improvements. The objective of

this activity is to have the candidate present to his/her dissertation committee a thoroughly developed professional prospectus for a research activity. The intent is have the dissertation prospectus turn into a full blown dissertation proposal. A dissertation proposal serves to set forth what work will be done, why, and with what anticipated results, and how the student plans to proceed. This work plan allows faculty to judge the investigation's importance, feasibility, and efficiency.

2. Chapter/SPSS Exercises: Each candidate will complete a set of exercises, some using the statistical software SPSS. This will provides candidates with opportunities to process and apply the statistical methods discussed in class.
3. Article Reflections: Each candidate will read, and reflect on, articles that include an application of the different statistical methods discussed in class. This will provide candidates with opportunities to see educational applications of the statistical methods discussed in class.

**Grading System:**

- Class attendance and participation 10%
- Chapter/SPSS exercises 30%
- Article reflections 20%
- Development of a research prospectus 40%

**Course Content:**

- Experimental and quasi-experimental research
- Designing non experimental studies
- Survey research
- Analyzing existing databases
- Validity, reliability and generalizability
- Introduction to SPSS and the dataset
- Univariate statistics
- Comparing groups (t-test and analysis of variance)
- Regression Analysis

**Required Textbook and Other Readings:**

Muijs, D (2006). *Doing Quantitative Research in Education with SPSS*. SAGE Publications, United Kingdom.

Genc, S. (2008). Critical thinking tendencies among teacher candidates. *Educational Science: Theory and Practice*, 8(1), 21-30.

McKinney, C. and Jones, H. (1993). Effects of a children's book and a traditional textbook on fifth-grade students' achievement and attitudes toward social studies. *Journal of Research and development in Education*, 27(1), 56-62.

Suh, S., Suh, J., and Houston, I. (2007). Predictors of categorical at-risk high school dropouts. *Journal of Counseling & Development*, 85(2), p196-203.

Wyss, V., Tai, R., and Sadler, P. (2007). . High school class-size and college performance in science. High School Journal, 90(3), p45-53

**Web Resources:**

StatSoft: Electronic Textbook: <http://davidmlane.com/hyperstat/index.html>

Installing and Using SPSS: <http://www.stat.tamu.edu/spss.php>

**Course Calendar:**

DATE	TOPIC	ASSIGNMENTS
9/6	<ul style="list-style-type: none"> <li>• Introduction to course</li> <li>• Quantitative research designs (experimental and quasi-experimental)</li> <li>• Univariate statistics</li> <li>• Introduction to SPSS</li> </ul>	<ul style="list-style-type: none"> <li>• Read chap 3 &amp; 4 (Muijs)</li> <li>• Chapter 6 exercises 1-5 (due 9/19)</li> <li>• Idea for research prospectus</li> </ul>
9/19	<ul style="list-style-type: none"> <li>• Validity, Reliability and generalizability</li> <li>• Non experimental studies</li> <li>• SPSS check in</li> <li>• Developing your prospectus</li> </ul>	<ul style="list-style-type: none"> <li>• Read chaps 7 &amp; 10 (Muijs)</li> <li>• Chapter 4 exercises 1-6 (due 10/4)</li> <li>• Development of prospectus</li> <li>• Quantitative articles exercises (handed out in class: due 10/4)</li> </ul>
10/4	<ul style="list-style-type: none"> <li>• Comparing groups               <ul style="list-style-type: none"> <li>○ Cross tabulation</li> <li>○ T-test</li> <li>○ Anova</li> </ul> </li> <li>• SPSS session</li> </ul>	<ul style="list-style-type: none"> <li>• Chapter 7 exercises 1-6 (due 10/17)</li> <li>• Development of prospectus</li> <li>• Quantitative articles exercises (handed out in class: due 10/17)</li> </ul>
10/17	<ul style="list-style-type: none"> <li>• Comparing groups continued</li> <li>• SPSS check in</li> <li>• Developing your prospectus</li> </ul>	<ul style="list-style-type: none"> <li>• Read chaps 8 &amp; 9 (Muijs)</li> <li>• Chapter 10 exercises 1-6 (due 11/15)</li> <li>• Draft of prospectus (due 11/15)</li> </ul>
11/15	<ul style="list-style-type: none"> <li>• Relationship between variables               <ul style="list-style-type: none"> <li>○ Correlation</li> <li>○ Regression analysis</li> </ul> </li> <li>• SPSS session</li> </ul>	<ul style="list-style-type: none"> <li>• Chapter 8 exercises 1-6 (due 11/21)</li> <li>• Prospectus presentation (due 11/21)</li> <li>• Quantitative article exercises (handed out in class: due 11/21)</li> </ul>
11/21	<ul style="list-style-type: none"> <li>• Regression analysis continued</li> <li>• Presentation of Prospectus</li> </ul>	<ul style="list-style-type: none"> <li>• Chapter 9 exercises 1-6 (due 12/12)</li> <li>• Final prospectus (due 12/12)</li> <li>• Quantitative articles exercises (handed out in class: due 12/5)</li> </ul>