Graduate Research: Score Comparison by Sex

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Graduate Research: Score Comparison by Sex

Abstract

Do males and females differ as to performance in a graduate-level research class? To investigate this question, the study compared test scores before and after a graduate-level advanced research class, by sex. The six classes that were the focus of this study were offered in the fall 2001, spring and fall 2002 and 2003, and spring 2004 terms under the same instructor. All sections incorporated article critiques, a critique-based exam, and an oral presentation of a grant application completed by the student. The critiques and grant application were included to provide the students with opportunities to apply the research knowledge they had acquired from their basic research courses. There were 83 participants for whom there was complete information, comprising 53 females (64%) and 30 males (36%). Multiple-choice pretests and posttests on fundamental research topics were administered. A thirty-item posttest yielded a somewhat low Cronbach's alpha of 0.53. Comparison on the pretest scores by sex yielded no statistically significant differences so a two-sample t-test was run on the posttest scores. The assumptions of normality and homoscedasticity were verified by the Omnibus Normality of Residuals and Modified-Levene Equal-Variance tests, but random selection was not possible since students cannot be randomly assigned to classes at this level. The t-test indicated that the null hypothesis of no difference between the posttest scores for the males and females could not be rejected at the 0.05 level ($t=0.80$, $p=0.43$). The effect size, $d=0.18$, was relatively small (Cohen). The Mann-Whitney U test agreed ($Z=0.68$, $p=0.50$). It is concluded, then, that there were no practical differences between males and females as to their test scores, suggesting that there are no particular academic benefits for one sex over the other in these graduate research classes.

Graduate Research: Score Comparison by Sex

Approaches to teaching research can vary widely (Campbell, 2000; Jackson and Wolski, 2001; Pors, 2000; Porter, 2001). Among these are a host of methods, used for a variety of courses. For example, Hitchcock and Murphy (1999) included nursing students in a faculty research study to teach undergraduate research by having the students participate as research subjects, data collectors, and consumers of research. Course evaluations and student comments indicated that the project helped develop positive attitudes and increased the students' comfort level with research.

Gieselman, Stark, & Farruggia (2000) recommended situated learning theory to inform nurses having little research experience to this topic. Following this idea, both the learner and the teacher are actively involved in instruction with each taking some responsibility for tasks. The learner determines what is meaningful, how it is to be understood, and how it is to be incorporated into what is already known. The instructor plays a supportive, rather than direct, role in learning.

Kern (2001) used an investigative laboratory instruction project to teach research to undergraduate nutrition students. While more costly than non-investigative laboratory instruction, the method was effective for teaching scientific concepts to college students. Benefits included greater familiarity with experimental design and implementation, greater curiosity about the topic, enhanced student commitment to the course, better student collaboration and interaction, and better developed critical thinking skills.

Upchurch, Brosnan, & Grimes (2002) taught synthesis of the research literature to advanced-practice nurses to help them find meaning in the research. Most of the student nurses reported that the strategies helped them integrate their research and clinical practice, showed them how to find and evaluate research, and promoted their independence and critical thinking. By the end of the process, they were

able to create and maintain a bibliographic database, prepare a computer graphics presentation, and document their research findings in a standard format. Despite some frustration and ambiguity, generally they rated the courses and faculty as above average to excellent, and recommended the courses to their peers.

Although these studies were based in health-related fields, there are other fields in which research methods are a topic of interest. For example, Kessler and Swatt (2001) applied mastery learning to the teaching of criminal justice research methods. Students rewrote exercises until they obtained perfect scores. The authors found that the better the students performed on the exercises, as well as the more that they rewrote their assignments, the more they improved from the pretest to the posttest (the final). In fact, as little as one or two rewrites maximized their improvement. The approach is more time consuming than a more traditional one, but was beneficial for struggling students.

Sever (2001) noted the difficulty of teaching research methods, in particular, within the graduate criminal justice curriculum. He studied 11 current criminal justice research methods textbooks and surveyed 36 graduate criminal justice instructors and their classes. The texts and the teachers emphasized quantitative methods, but the texts focused more on qualitative methods than did the instructors. Both tended to neglect critical areas including grant proposal writing, article writing and critiquing, and standards for collaborative research efforts. Sever recommended that research methods should be included in the lectures and textbooks of other criminal justice classes to help bridge the gap between theory and application.

Lanier (2002) outlined a model that involved criminal justice students with data collection, analysis, and computer programs. He illustrated the process with a case study based on his Spring 1999 graduate course in quantitative methods and computer usage. He noted that the ultimate measure of success was how much the students

actually learned, perhaps best demonstrated by the students who continued working with the data. They were able to use the strategies and software to contribute to the criminological knowledge base. Success was further illustrated by the students' excitement as they collected their own data and studied something that could make a difference.

Another area in which research methods has played an important role is that of communications. For example, Keyton (2001) suggested service-learning as a pedagogical approach to teaching research methods. The model incorporated experiential learning, applied research, and a joint service-learning commitment between the students and the instructor. Most students learned two important lessons, that their capacity to perform research activities far exceeded their initial expectations, and that the utility or necessity of learning research methods was greater than they might have initially believed. Course evaluations indicated that the approach provided a context and motivation for learning as well as demonstrating the practical application of research principles.

Rodrick and Dickmeyer (2002) incorporated a capstone research experience into the communications curriculum to help students find relevance and ownership during the research process. Students learned to appreciate that research is, and always will be, a part of their lives. Instead of viewing a research project as a hoop through which to jump, they planned for it and were excited about it. The downside of the approach is that the projects are faculty-intensive so it may be difficult to provide enough faculty to sufficiently mentor and supervise students.

Design

Research methods are an important content area to include in probably any field, as these examples have served to illustrate. It is also clear from these examples that there are many approaches which might be used to teach research methods, but those that seem to be most effective are those which emphasize hands-on projects. Among those projects identified as being helpful are critiquing

articles and writing grant proposals, components of the method used in the present study, which used a quasi-experimental single-subject pretest-posttest design. The study investigated the effectiveness of an approach to teaching an advanced research class by comparing male and female students' test scores on a test of research fundamentals before and after the course. The six classes that were the focus of this study were offered in the fall 2001, spring and fall 2002 and 2003, and spring 2004 terms under the same instructor.

Subjects

There were 83 participants for whom there was complete information, comprising 53 females (64%) and 30 males (36%), almost all of whom were pursuing doctorates in educational administration or higher education. Most of the students are public school or college, teachers or administrators.

Course

All sections incorporated article critiques (based on an instrument from Wilson and Onwuegbuzie), a critique-based exam, and an oral presentation of a grant application completed by the student. The purpose of the critiques and grant application were to provide the students with opportunities to apply in some depth the research knowledge that they had acquired from their basic research courses (The most recent syllabus for this course, for Spring 2004, is appended.).

For the initial fall term, students were expected to present three article critiques, basing their comments on the Wilson and Onwuegbuzie instrument and emphasizing specific components indicated by the instructor, including the introduction, literature review, method, and other fundamental features of a research study. The class was invited to join the instructor in quizzing the presenters on their materials and adding commentary to the discussion. The midterm exam comprised another article to critique, but during class time rather than outside of class. The

students initially did very well with these critiques; therefore, the required number was reduced to two for subsequent classes.

After the midterm, the students focused on grant proposals. The task included determining a project and then finding a funding agency that would have an interest in it. This project required a considerable amount of research on the part of the students so they were apprised of this responsibility the first day of class. They were encouraged to investigate funding opportunities either through the materials distributed in class; through library resources; through principals, superintendents and other supervisory personnel; through the internet; and/or through other resources or personnel whom they might have located. In the fall of 2001, one of the students, who worked as a grant-proposal-writing specialist, volunteered to talk to the class about proposal writing. The response to her presentation was so strongly positive, that an invitation was extended to the Director of the Office of Research and Sponsored Programs to present on the same topic in the spring. His presentation was so well received that he was asked to return in subsequent semesters, which he did, providing guidance to the classes as to how to successfully pursue grant funding.

The rationale for requiring the completion of grant applications rather than research proposals is that most grant applications require essentially the same information as that of research proposals although the need for a budget and the formatting are different. Nevertheless, it is a very practical experience for the students, and still provides an opportunity to implement their research knowledge. The students are generally enthusiastic about the project and many of them actually submit the completed application, even though it is not required. During one recent term, a fourth of the students were able to report that their proposals were funded while a third of the class were funded the following semester.

Results

While having a funded proposal is exciting, there is also the content side of the course to consider. To measure the students' progress in this area, multiple-choice pretests and posttests on fundamental research topics were given. The items were developed from a popular research textbook to insure that there would be variance in the test scores as well as content validity. A thirty-item posttest yielded a somewhat low Cronbach's alpha of 0.53 as an indicator of internal reliability. Since there were no statistically significant, at the 0.05 level, initial differences in the pretest scores as to sex, a two-sample t-test was run to compare the posttest scores (Hintze, 2004). The assumptions of normality and homoscedasticity were verified by the Omnibus Normality of Residuals and Modified-Levene Equal-Variance tests, but random selection was not possible since students cannot be randomly assigned to these classes. However, there were no obvious demographic differences among the students to suggest that the student make-up might be substantially biased compared to other graduate statistics classes in state-supported colleges or universities in the mid-south region. No control group was possible since all sections of the course were taught by the same instructor. The t-test indicated that the null hypothesis of no difference between the posttest scores for the males and females could not be rejected, at the 0.05 level ($t=0.80$, $p=0.43$). The effect size, $d=0.18$, was relatively small (Cohen). The Mann-Whitney U test agreed ($Z=0.68$, $p=0.50$). It is concluded, then, that there were no practical differences in the sexes as to their test scores, suggesting that there are no particular academic benefits for one sex over the other in these graduate research classes.

Discussion

Critiquing the articles and applying the knowledge gained provided an opportunity for growth in understanding as well as motivation to continue working in research venues. The hands-on, activity-based approach received numerous favorable comments from the students on their final evaluation forms, indicating their satisfaction with the activities.

Implications

One adjustment to the class for the Fall 2002 term was the addition of a requirement to find exemplars of various research proposal components. This activity was added because not all of the articles that were critiqued were necessarily exemplary in all, or even some, respects. By searching for particularly good examples of these components, the students began to evaluate the literature and more fully realized the purpose for critiquing papers and becoming critical consumers of published research, as well as better researchers themselves.

References

Campbell, K. S. (2000, April). Research methods course work for students specializing in business and technical communication. Journal of Business and Technical Communication, 14(2), 223-241.

Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences, 2nd ed. Hillsdale, NJ: Lawrence Erlbaum, Associates.

Gieselman, J. A., Stark, N., & Farruggia, M. J. (2000, November/December). Implications of the situated learning model for teaching and learning nursing research. The Journal of Continuing Education in Nursing, 31(6), 263+.

Hintze, J. L. (2004). NCSS 2004 Statistical System for Windows. Kaysville, UT: NCSS.

Hitchcock, B. W. & Murphy, E. (1999, March). A triad of research roles: Experiencial learning in an undergraduate research course. Journal of Nursing Education, 38(3), 120+.

Jackson, S. & Wolski, S. (2001, July). Identification of and adaptation to students' preinstructional beliefs in introductory communication research methods: Contributions of interactive Web technology. Communication Education, 50(3), 189-205.

Kern, M. (2001, September/October). An integrative research project for teaching research concepts and nutrition principles to college students. Journal of Nutrition Education, 33(5), 301-302.

Kessler, D. A. & Swatt, M. (2001, Spring). Mastery learning, rewriting assignments and student learning of criminal justice research methods. Journal of Criminal Justice Education, 12(1), 127-146.

Keyton, J. (2001, Spring). Integrating service-learning in the research methods course. The Southern Communication Journal, 66(3), 201-210.

Lanier, M. M. (2002, Spring). A pedagogical aid for linking methodological and statistical courses. Journal of Criminal Justice Education, 13(1), 155-171.

Pors, N. O. (2000). Statistics and teaching in departments of library and information studies. The Bottom Line, 13(1), 16+.

Porter, E. J. (2001, February). Teaching undergraduate nursing research: A narrative review of evaluation studies and a typology for further research. Journal of Nursing Education, 40(2), 53+.

Rodrick, R. & Dickmeyer, L. (2002, January). Providing undergraduate research opportunities for communication students: A curricular approach. Communication Education, 51(1), 40-50.

Sever, B. (2001, Fall). Research methods for criminal justice graduate students: Comparing textbook coverage and classroom instruction. Journal of Criminal Justice Education, 12(2), 337-353.

Upchurch, S., Brosnan, C. A., & Grimes, D. E. (2002, May). Teaching research synthesis to advanced practice nurses. Journal of Nursing Education, 41(5), 222+.

Wilson, V. A. & Onwuegbuzie, A. J. (1999, November). Improving Achievement and Student Satisfaction Through Criteria-Based Evaluation: Checklists and Rubrics in Educational Research Courses. Paper presented to the Annual Meeting of the Mid-South Educational Research Association, Point Clear,

Alabama.

Two-Sample Test Report

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Variable Pretest

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Sex=0	53	11.07547	3.45214	0.4741879	10.12394	12.027
Sex=1	30	10.8	2.952497	0.5390498	9.697519	11.90248

Note: T-alpha (Sex=0) = 2.0066, T-alpha (Sex=1) = 2.0452

Confidence-Limits of Difference Section

Variance Assumption	DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	81	0.2754717	3.282009	0.74986	-1.216515	1.767458
Unequal	68.40	0.2754717	4.542523	0.7179338	-1.15699	1.707933

Note: T-alpha (Equal) = 1.9897, T-alpha (Unequal) = 1.9953

Equal-Variance T-Test Section

Alternative Hypothesis	T-Value	Prob Level	Decision (5%)	Power (Alpha=.05)	Power (Alpha=.01)
Difference <> 0	0.3674	0.714306	Accept Ho	0.065230	0.015013
Difference < 0	0.3674	0.642847	Accept Ho	0.022260	0.003598
Difference > 0	0.3674	0.357153	Accept Ho	0.100176	0.024703

Difference: (Sex=0)-(Sex=1)

Aspin-Welch Unequal-Variance Test Section

Alternative Hypothesis	T-Value	Prob Level	Decision (5%)	Power (Alpha=.05)	Power (Alpha=.01)
Difference <> 0	0.3837	0.702390	Accept Ho	0.066554	0.015444
Difference < 0	0.3837	0.648805	Accept Ho	0.021445	0.003440
Difference > 0	0.3837	0.351195	Accept Ho	0.102947	0.025579

Difference: (Sex=0)-(Sex=1)

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality (Sex=0)	1.6905	0.090930	Cannot reject normality
Kurtosis Normality (Sex=0)	1.0503	0.293589	Cannot reject normality
Omnibus Normality (Sex=0)	3.9609	0.138005	Cannot reject normality
Skewness Normality (Sex=1)	0.8512	0.394644	Cannot reject normality
Kurtosis Normality (Sex=1)	-2.0239	0.042982	Reject normality
Omnibus Normality (Sex=1)	4.8207	0.089785	Cannot reject normality
Variance-Ratio Equal-Variance Test	1.3671	0.367414	Cannot reject equal variances
Modified-Levene Equal-Variance Test	0.0425	0.837178	Cannot reject equal variances

Two-Sample Test Report

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Variable Pretest

Median Statistics

Variable	Count	Median	95% LCL of Median	95% UCL of Median
Sex=0	53	11	10	11
Sex=1	30	10	9	13

Mann-Whitney U or Wilcoxon Rank-Sum Test for Difference in Medians

Variable	Mann Whitney U	W Sum Ranks	Mean of W	Std Dev of W
Sex=0	843	2274	2226	104.8736
Sex=1	747	1212	1260	104.8736

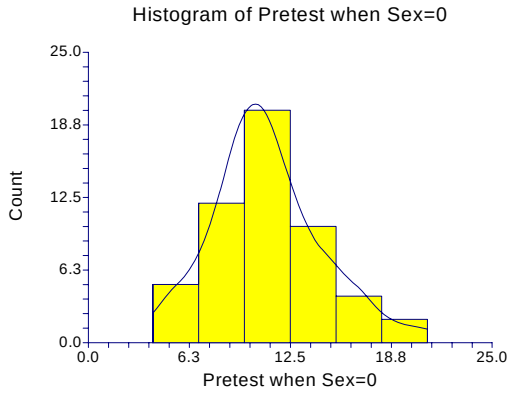
Number Sets of Ties = 12, Multiplicity Factor = 6756

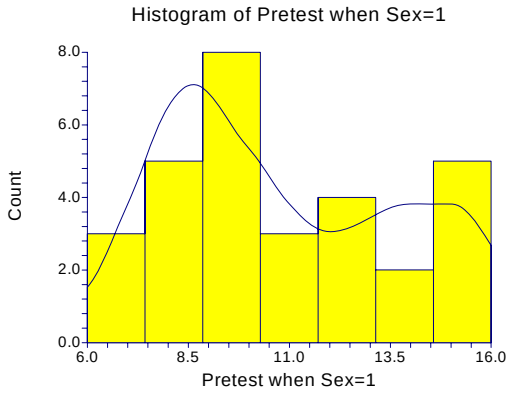
	Exact Probability		Approximation Without Correction			Approximation With Correction		
Alternative Hypothesis	Prob Level	Decision (5%)	Z-Value	Prob Level	Decision (5%)	Z-Value	Prob Level	Decision (5%)
Diff<>0			-0.4577	0.647172	Accept Ho	-0.4529	0.650602	Accept Ho
Diff<0			-0.4577	0.676414	Accept Ho	-0.4625	0.678125	Accept Ho
Diff>0			-0.4577	0.323586	Accept Ho	-0.4529	0.325301	Accept Ho

Kolmogorov-Smirnov Test For Different Distributions

Alternative Hypothesis	Dmn Criterion Value	Reject Ho if Greater Than	Test Alpha Level	Decision (Test Alpha)	Prob Level
D(1)<>D(2)	0.112579	0.3107	.050	Accept Ho	0.9378
D(1)<D(2)	0.061006	0.3107	.025	Accept Ho	
D(1)>D(2)	0.112579	0.3107	.025	Accept Ho	

Plots Section





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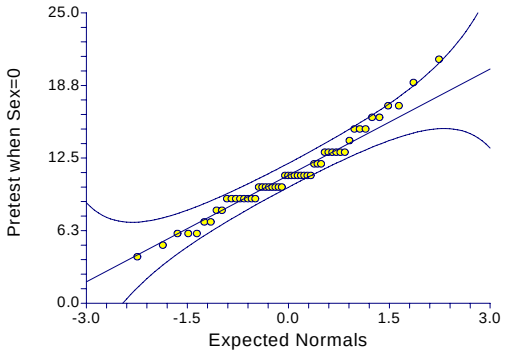
Normal Probability Plot of Pretest when Sex=0



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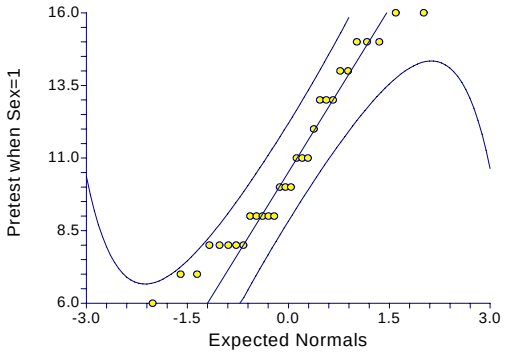
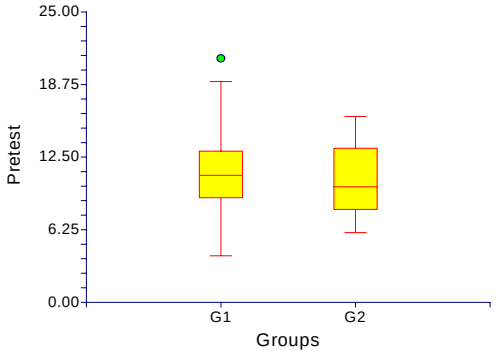


Box Plot



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Variable Posttest

Descriptive Statistics Section

Variable	Count	Mean	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Sex=0	53	11.62264	3.783702	0.5197315	10.57972	12.66556
Sex=1	30	10.96667	3.200036	0.584244	9.771753	12.16158

Note: T-alpha (Sex=0) = 2.0066, T-alpha (Sex=1) = 2.0452

Confidence-Limits of Difference Section

Variance Assumption	DF	Mean Difference	Standard Deviation	Standard Error	95% LCL of Mean	95% UCL of Mean
Equal	81	0.6559749	3.58567	0.8192394	-0.9740546	2.286004
Unequal	68.97	0.6559749	4.955465	0.7819602	-0.9040047	2.215954

Note: T-alpha (Equal) = 1.9897, T-alpha (Unequal) = 1.9950

Equal-Variance T-Test Section

Alternative Hypothesis	T-Value	Prob Level	Decision (5%)	Power (Alpha=.05)	Power (Alpha=.01)
Difference <> 0	0.8007	0.425641	Accept Ho	0.124228	0.037007
Difference < 0	0.8007	0.787180	Accept Ho	0.007366	0.000923
Difference > 0	0.8007	0.212820	Accept Ho	0.197435	0.061912

Difference: (Sex=0)-(Sex=1)

Aspin-Welch Unequal-Variance Test Section

Alternative Hypothesis	T-Value	Prob Level	Decision (5%)	Power (Alpha=.05)	Power (Alpha=.01)
Difference <> 0	0.8389	0.404432	Accept Ho	0.131325	0.039811
Difference < 0	0.8389	0.797784	Accept Ho	0.006651	0.000819
Difference > 0	0.8389	0.202216	Accept Ho	0.207770	0.066318

Difference: (Sex=0)-(Sex=1)

Tests of Assumptions Section

Assumption	Value	Probability	Decision(5%)
Skewness Normality (Sex=0)	2.4422	0.014598	Reject normality
Kurtosis Normality (Sex=0)	1.2253	0.220466	Cannot reject normality
Omnibus Normality (Sex=0)	7.4656	0.023925	Reject normality
Skewness Normality (Sex=1)	1.7132	0.086682	Cannot reject normality
Kurtosis Normality (Sex=1)	0.2277	0.819905	Cannot reject normality
Omnibus Normality (Sex=1)	2.9868	0.224611	Cannot reject normality
Variance-Ratio Equal-Variance Test	1.3981	0.333634	Cannot reject equal variances
Modified-Levene Equal-Variance Test	0.6779	0.412738	Cannot reject equal variances

Two-Sample Test Report

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Variable Posttest

Median Statistics

Variable	Count	Median	95% LCL of Median	95% UCL of Median
Sex=0	53	11	10	12
Sex=1	30	10	9	12

Mann-Whitney U or Wilcoxon Rank-Sum Test for Difference in Medians

Variable	Mann Whitney U	W Sum Ranks	Mean of W	Std Dev of W
Sex=0	866	2297	2226	104.8842
Sex=1	724	1189	1260	104.8842

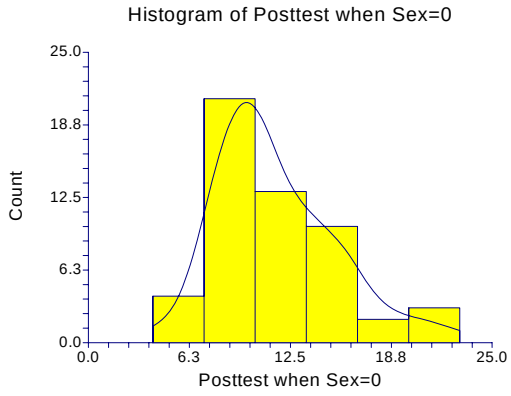
Number Sets of Ties = 12, Multiplicity Factor = 6642

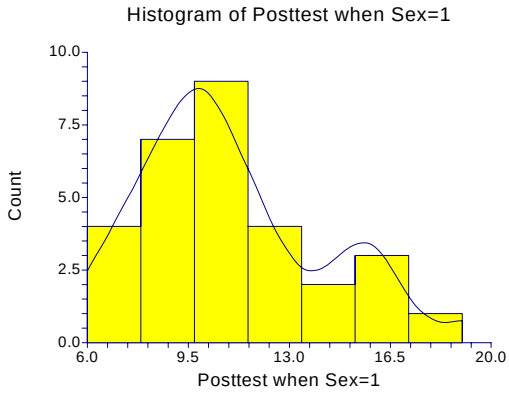
	Exact Probability		Approximation Without Correction			Approximation With Correction		
Alternative Hypothesis	Prob Level	Decision (5%)	Z-Value	Prob Level	Decision (5%)	Z-Value	Prob Level	Decision (5%)
Diff<>0			-0.6769	0.498446	Accept Ho	-0.6722	0.501476	Accept Ho
Diff<0			-0.6769	0.750777	Accept Ho	-0.6817	0.752287	Accept Ho
Diff>0			-0.6769	0.249223	Accept Ho	-0.6722	0.250738	Accept Ho

Kolmogorov-Smirnov Test For Different Distributions

Alternative Hypothesis	Dmn Criterion Value	Reject Ho if Greater Than	Test Alpha Level	Decision (Test Alpha)	Prob Level
D(1)<>D(2)	0.100629	0.3107	.050	Accept Ho	0.9744
D(1)<D(2)	0.018868	0.3107	.025	Accept Ho	
D(1)>D(2)	0.100629	0.3107	.025	Accept Ho	

Plots Section





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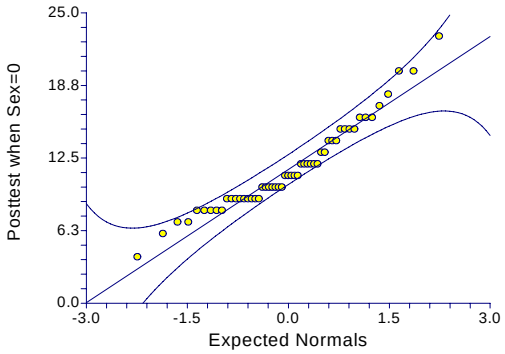
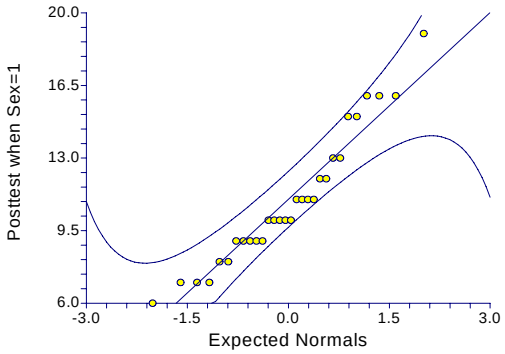
Variable	Posttest

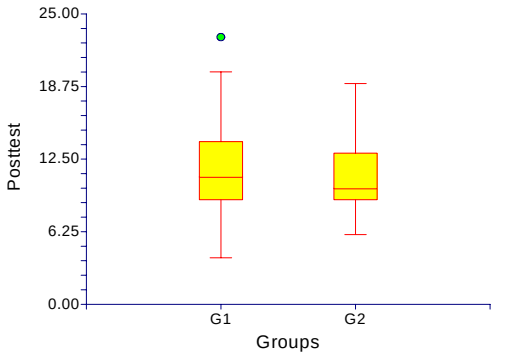
Normal Probability Plot of Posttest when Sex=0



Normal Probability Plot of Posttest when Sex=1



Box Plot



UNIVERSITY OF ARKANSAS AT LITTLE ROCK
College of Education
Department of Educational Leadership
(revised 12/31/03)

I.	**Course Prefix and Number**	**EDFN 8306**
II.	**Course Title**	**Advanced Research Methods and Techniques**
III.	**Credit**	**3 hours**
IV.	**Semester and Year**	**Spring, 2004**
V.	**Instructor**	**Rob Kennedy, Ph.D., Professor of Educational Foundations and Higher Education**
VI.	**Office Location**	**Dickinson 419B**
VII.	**Office Hours**	**By appointment**
VIII.	**Telephone**	**501-xxx-xxxx (UALR), 501-xxx-xxxx (home), rlkennedy@ualr.edu (e-mail)**

IX. Course Description

Quantitative, qualitative research methods, techniques used in education; includes nature of scientific inquiry; planning, evaluation of educational research; sampling, measurement; commonly used research designs, methods, techniques.

The Conceptual Framework for programs in the College of Education is Leadership in Learning through Communication, Specialized Expertise, and Professional Development.

Communication: Students will use the expertise that they gain from Educational Foundations courses to communicate with a wide variety of audiences. They will know how to translate and evaluate current research trends and assessment practices in education. Based on their skills, these students will effectively advocate for best practices in educational improvement and thoughtful change in other work settings.

Specialized Expertise: Students will gain essential tools of their discipline in order to positively effect and measure change in students, schools, and organizations. They will gain knowledge of learning, diverse learning styles and instructional needs, lifespan growth and development, educational and psychological principles, assessment, and research.

Professional Development: Students will view themselves as professionals who are committeed to lifelong learning. They will strive to incorporate the latest in educational research, assessment, and technology into their work settings. They will be committed to data-based problem solving, to the value of inquiry in their disciplines, and to continually updating their knowledge toward teaching and learning.

X. Course Objectives

The objective is for you to become equipped to plan and implement research projects, including the dissertation. More specifically, you will be given exercises to help you:

Comprehend and evaluate written reports of research in education and related areas of inquiry. (Arkansas Licensure Principles 1.1.1, 1.2.2, 1.3.1, 1.3.2, 1.3.4, 1.3.5, 3.1.3, 3.1.4, 5.1.1, 5.1.2, 5.2.1, 5.3.1, 5.3.2, Specialized Expertise, Professional Development)

Analyze information through reviewing research literature. (Arkansas Licensure Principles 1.1.1, 1.2.2, 1.3.1, 1.3.2, 1.3.4, 1.3.5, 3.1.3, 3.1.4, 5.1.1, 5.1.2, 5.2.1, 5.3.1, 5.3.2, Specialized Expertise, Professional Development)

Become familiar with the fundamentals of the research process by identifying research questions and planning research projects through writing grant proposals. (Arkansas Licensure Principles 1.1.1, 1.2.2, 1.3.1, 1.3.2, 1.3.4, 1.3.5, 3.1.3, 3.1.4, 5.1.1, 5.1.2, 5.2.1, 5.3.1, 5.3.2, Specialized Expertise, Professional Development)

Become familiar with the fundamentals of being consumers of research through such procedures as locating research materials; reading them for knowledge, understanding, application, analysis, and synthesis; and evaluating them on the basis of their development, execution, and delivery. (Arkansas Licensure Principles 1.1.1, 1.2.2, 1.3.1, 1.3.2, 1.3.4, 1.3.5, 2.1.6, 2.2.5, 2.3.8, 3.1.3, 3.1.4, 5.1.1, 5.1.2, 5.2.1, 5.3.1, 5.3.2, Communication, Specialized Expertise, Professional Development)

Develop leadership and research skills through learning independently and making decisions based on this research. (Arkansas Licensure Principles 1.1.1, 1.2.2, 1.3.1, 1.3.2, 1.3.4, 1.3.5, 2.1.6, 2.2.5, 2.3.8, 3.1.3, 3.1.4, 5.1.1, 5.1.2, 5.2.1, 5.3.1, 5.3.2, Communication, Specialized Expertise, Professional Development)

XI. Texts, Readings, and Instructional Resources

Required Text

There is no one required text for the course. Rather, you are expected to utilize a variety of informational resources, with an emphasis on web-based sites.

Supplemental Reading

American Psychological Association. (2001). Publication manual of the American Psychological Association (5th ed.). Washington, D.C.: Author.

XII. Assignments, Evaluation Procedures, and Grading Policy

Course Requirements

Students who demonstrate a commitment to the course through participation, reading, studying, and otherwise applying themselves to the course will benefit in direct proportion to that effort. If you view your coursework as an extracurricular activity that you pursue if you have some extra time, then expect to feel as though you learned little or nothing upon completing the class. If the course is to be a worthwhile experience for you, then you need to invest in it. In other words, "You get out of it what you put into it."

Evaluation Techniques/Concepts Used for Grading

Participation in Signing up for the Class List and Web Crossing (5%)
Participation in Article Reviews (10%)
Participation in Finding and Presenting Exemplars (10%)
Mid-term Examination (20%)
Final Examination (20%)
Grant Application (15%)
Knowledge (15%)
Bibliographic Annotation (5%)

Participation in Signing up for the Class List and Web Crossing (5%)

It is important for you to further participate by signing up for the electronic class (See AdvResearchSignup.pdf) and Web Crossing (See WebCrossing.pdf) so that you can benefit from the additional information available that way. Also, if I need to share updates with you about class closings, for inclement weather or other reason, then you will be able to get that information quickly, so please check your email regularly. Signing up for the class list and Web Crossing is important so

you will be expected to do this within the first week of class to receive full credit for participation in this area. After a week, one percent of the five percent credit will be deducted for each day you are late.

It is important also that you keep up with your email regularly and certainly at least daily. If the class is to carry on a discussion and has questions about something that you posted, then you will need to check regularly to see if you need to respond to those questions. In addition, when I try to contact you and am kept waiting for days at a time, then you are taking my time away from other work that I need to do for the class. Although I would like for you to check your email daily, I do realize that there are circumstances in which you may be taken away from computer access from time to time. Therefore, I will not assess a penalty unless I receive no response from you over a 48-hour period, not including Saturday and Sunday. One percent of the five percent credit will be deducted for the each 48-hour period in which you do not respond to my messages. If you need to be away from your computer access for an extended period of time, simply let me know. That will at least give me an opportunity to contact you before you are away.

Participation in Article Reviews (10%)

Each week, you will be assigned two articles, available through the web, to evaluate. You will be expected to evaluate each, but will present your findings for only the ones assigned. You will also need to participate in the discussions of the other articles, but as part of the class rather than formally. You may work individually on your assigned review, or as part of a group, but each person is expected to contribute to the discussion of the assigned paper. Lack of participation or clearly inadequate preparation will yield no credit.

The format for the evaluations is provided in the file PaperEvaluation.pdf. The terminology comes from your basic research and statistics classes which are prerequisites for this course. If you do not remember what a given term means, then it is your responsibility to demonstrate your research skills by looking up the term, either through the web, in a text, or via another source. Saying that you do not know what something means in lieu of providing an answer will be considered as evidence that you are clearly inadequately prepared, as noted in the previous paragraph. Since preparing for presenting/teaching is an effective form of hands-on learning, this activity should increase the amount of learning taking place. Note that it is common to use the demos and examples that I provide as a template of sorts to do the article reviews. Responses that address additional areas, as listed in the PaperEvaluation.pdf file, will be looked upon more favorably than critiques that merely reproduce what I did, but with the current article's information inserted.

Please let me know if you need to miss a class. Skipping a class to avoid taking responsibility for the week's assignment not only detracts from your own learning, but also deprives your peers of the richer discussion that your preparation could have provided. Unexcused absences will result in no credit for that assignment.

Participation in Finding and Presenting Exemplars (10%)

Some of the articles that will be critiqued in class will be good, even exemplary. Others will have deficiencies. So that good examples can be studied regularly, you will need to find and present three "good" examples of assigned components:

1 Title and Abstract
2 Introduction and Statement of the problem/Research hypothesis
3 Review of the literature
4 Research design/Evaluation
5 Threats to internal and external validity
6 Delimitations/Limitations
7 Subjects and Population
8 Instruments/Measures and Data collection procedures
9 Data analysis and Findings
10 Discussion

More information about each of these components can be found in the PaperEvaluation.pdf file. More information about this assignment can be found in the Exemplars.pdf file.

Mid-term Examination (20%)

The mid-term exam will comprise the evaluation of another article, just as done in class. The evaluation format will be the same, so the practice you receive from class should prepare you for this test. The exam will require everything from merely having knowledge to the ability to apply information, synthesize, and evaluate. The test is to help encourage you to learn the vocabulary and become familiar with various concepts of research.

Final Examination (20%)

The final exam will be similar to the mid-term exam, other than I will have higher expectations of your ability to evaluate an article, since you will have had considerably more experience by then, in critiquing and discussing papers.

Grant Application (20%)

The opportunity to apply what you have learned in a real-life situation is important to your learning. Therefore, you are expected to write a grant proposal to a funding agency. The funding agency for your proposal will be a source of your choosing. (See, for examples, the files FundingAgency.pdf and Topics.pdf.) You will be expected to locate the funding source, request and obtain a grant application form from it, and complete it for submission to your instructor. A copy of the application form and its instructions, or the URL for the web page with this information, must accompany the copy submitted to the instructor to enable accurate assessment. You are encouraged to submit the application to the funding agency, although this is not required. However, you should not pursue this step unless you have the time, resources, and commitment to administer the grant since a substantial number of grants have been awarded to students in previous classes and you may become one of them! The funder will expect you to carry out the project and provide it with a final report. If you do follow through, please notify the instructor when you submit the document as well as provide documentation of the outcome. The report of your grant application should be posted to the class list also, so that all can share.

In evaluating this grant proposal, I will be looking for the required components (those required by the funding agency), as well as for the overall quality of the proposal in terms of its professionalism. Proper grammar, spelling, and punctuation, typing or word processing, and other aesthetic considerations are expected to be a part of your effort. The proposal should not only look good, but should read well. Proposals which do not meet these standards of professionalism will be considered unacceptable. You will need to submit at least a synopsis of your proposal on paper for the benefit of the class, but please do not use covers or other binders. Simply paper clip the pages together to facilitate their being taken apart for review. At least one other person, preferably more, should review your proposal before it is submitted for evaluation, to check for readability and completeness. If the paper is satisfactory, you will receive full credit. If it is not, then I will tell you what you need to do to complete or improve it, if there is time to do so. Please do not hand in proposals that are "rough drafts". They will simply be returned without being graded. You should feel that your application is complete before submitting it. Handing in the proposal the last night of class or during finals week means there is *not* time for revision. Also, the later in the course that your proposal is submitted, the greater expectation I will have of your ability, since you will have had increasingly more practice evaluating research.

The application should be submitted electronically to the class discussion list, edfn830601@ualr.edu, so that all may benefit from your contribution. If there is some proprietary information that cannot be posted, just indicate that for the appropriate sections.

Knowledge (15%)

This component of your grade is an opportunity for you to design a path for your own learning about research and your assessment of that learning. In addition, the more that the individual class members know and can contribute to discussions, the richer the class experience will be for everyone. Therefore, I am asking you to design a way for you to learn that suits you best, and to assess your performance following this approach. When you have a plan for how you are going to learn more about research and how you expect to measure your progress, then email it to me by the middle of September. When we

agree on a suitable proposal, then you can implement it and show me your results by the end of the semester.

Bibliographic Annotation (5%)

The specifications for the Bibliographic Annotation are described in the file BibAnnotation.pdf.
Bibliographic annotations allow students to share with other researchers (future Advanced Research students) similar to the manner in which researchers share information through formal publications. The student should investigate sources found useful in developing understanding for the course, that is, research- or grant-type resources as opposed to resources related specifically to the topic being investigated. Only one annotation is required. Preferably the source will be one that you found personally useful.

Grading scale:

90-100	**A**
80-89	**B**
70-79	**C**
60-69	**D**
Below 60	**F**

XIII. Class Policies

Again, "You get out of it what you put into it." These words have greater meaning in this class in which the discussion contributes highly to the learning of each individual. It is important that each person be prepared to contribute to these discussions. Students who demonstrate dedication to the course through attendance, participation, reading, studying, and otherwise applying themselves to the course will benefit in direct proportion to that effort. Practicing with the applications is necessary for developing your skill with, and understanding of, research. Just as playing a piano requires much practice to hone ability and interpretation, so does the skill of doing and evaluating research. If you want to know the hows and whys of research, then you need to dig into the subject. Create your own problems and investigate them. Merely doing the assignments will enable you to get through the course, but true understanding will always require greater commitment. As an advanced student of education, you must decide if you want to add to your credentials the word "leader".

It is natural to wish to converse during class. However, if you must speak, please do so quietly to avoid distracting the other students who are also paying for the instruction they are trying to hear. If conversing with your friends about unrelated topics is more important to you than listening to this instruction, then please step into the hallway to have the desired discussion.

Additionally, note that because the lab in which we will be working contains a large amount of very expensive equipment, please do not bring in food or drinks. This practice can be messy and distracting to other students. Even small candies or other wrapped items create noise when unwrapped or while you are digging in the package. I have found food items and drink cans left after class. You can imagine how much this situation would reflect on your professionalism if you were the one leaving such debris. If you need to eat during class time, then you are welcome to visit the break lounge near the elevators.

If you must be available for communication, please show other class members the courtesy of setting your cellular phone, pager, beeper, or other device on vibrate so that it does not annoy or distract the other students in the class should it activate. I'm sure that everyone enjoys hearing "Fur Elise" or the "Arkansas Razorback National Anthem", but usually not when concentrating on the subject at hand. If you do need to take the call, please step out into the hallway to converse.

XIV. Class Schedule

January 15	**Introduction, pretests, picture**
January 22	**Demonstration of article review and component exemplars. Sign up for article presentations, component exemplars.**
January 29	**Article reviews Component exemplars**
February 5	**Article reviews Component exemplars**
February 12	**Article reviews Component exemplars**
February 19	**ACE-D/HH (Association of College Educators of the Deaf and Hard of Hearing) Conference. No class.**
February 26	**Article reviews Component exemplars**
March 4	**Article reviews Component exemplars**
March 11	**Article reviews Component exemplars**
March 18	**Spring Break! No class.**
March 25	**Grant application writing presentation by the Director of Research and Sponsored Programs, UALR Sign up for grant application presentations.**
April 1	**Mid-term exam, evaluation**
April 8	**Grant application presentations**
April 15	**Grant application presentations**
April 22	**Grant application presentations**
April 29	**Grant application presentations**
May 6	**6:00 - 8:00 p.m. Final, evaluation, posttest.**

XV. Topical Outline

The topics below will be among those addressed through the article reviews:

The Nature of Educational Research
Statistical Techniques
Selecting a Sample
Collecting Research Data with Tests and Self-Report Measures
Collecting Research Data with Questionnaires and Interviews
Collecting Research Data through Observation and Content Analysis
Descriptive and Causal-Comparative Research Designs
Correlational Research Designs
Experimental Designs

XVI. Bibliography

Achilles, C. M., Reynolds, J. S. & Achilles, S. H. (1997). *Problem analysis: Responding to school complexity.* Larchmont, NY: Eye on Education.

This book is a must for educational leaders who are faced with problems to solve on a daily basis. It deals with problem analysis (problem finding and problem solving) and provides several cases and vignettes for enhancing a leader's ability to make proper decisions and effective changes. Problem solving models provide steps that are involved in problem analysis. One very important step is research, seeking sources of relevant information both qualitative and quantitative. (D. W. Collins)

Burke, J., & Prater C.A. (2000). I'll grant you that. Portsmouth, NH: Heinemann.

This text offers great step-by-step techniques to grant writers. It is an excellent source for anyone but would be a must to a beginning grant writer. The book begins with the planning process of grant writing. In chapter 2 you learn how much money to ask for and chapter 3 goes into who to ask for help and support along the way. Each chapter has valuable information and sections on letters, applications, and even total grant packages. There are a variety of models and examples that will assist in the grant writing process. This is not a John Grisham novel but it is a very enjoyable informative text. This will be a terrific guide to use while in the process of writing the grant. Those with grant writing experience might not want the A to Z approach but they could use a portion of the text for any question they might ask. Whether you are writing a simple letter, a portion of a proposal, or working with a team you will find this a perfect reference. (R. Ellis)

Catalog of Federal Domestic Assistance (CFDA). (2002) http://www.cfda.gov/

This site is a very useful resource that can be used throughout the federal grant process, from searching for available funding sources to writing and formatting the actual grant proposal. All federal calls for proposals are released through the CFDA. The database can be searched in a variety of methods including by department or by a simple keyword search. It also has a helpful document that can be accessed from the CFDA homepage called *Developing and Writing Grant Proposals*. The tools discussed in this document are specific to the wants of most federal grant proposals. The Frequently Asked Questions page, whose link is located at the top of the CFDA homepage, answers several useful questions that seem to come up very often during the grant process. It also discusses perhaps the most important form when writing a federal grant, the SF 424. This form is required for all federal grant proposals. (R. Tompkins)

Creswell, John W. (2002). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches.* SAGE Publishers.

This textbook is an extremely useful source for learning how to design research experiments. The language is straightforward and professional, but not so technical that it is too difficult for students. Throughout the text, the steps involved in the research process are broken down, labeled and explained, both for qualitative and quantitative research. An entire chapter is devoted to ethics and research, which clearly defines profession guidelines and obligations when conducting research. Furthermore, the text explains in specific detail how to design dissertation proposals. This source is set apart from others because of the clarity and precision used to explain research concepts. The book is simplistic enough for students but not so basic as to appear condescending. (K. Halpern)

Eisenhower National Clearinghouse http://www.enc.org/professional/funding/writing/

This address is a page within the Eisnehower National Clearinghouse site which has hyperlinks to ten additional sources (eight of which are valid) that cover most aspects of the grant writing process. The eight operational links are described as follows:

A Guide for Proposal Writing http://www.nsf.gov/pubs/1998/nsf9891/nsf9891.htm
As one of the major funding agencies in the country, the National Science Foundation is an authoritative source of information for grantseekers. This web guide was written for applicants within the Division of Undergraduate Education and serves more as general guidelines for an applicant than as specific guidelines for a particular program.

A Proposal Writing Short Course http://fdncenter.org/learn/shortcourse/prop1.html
This web-based short course from the Foundation Center is thorough and filled with examples. Like other good guides, the course stresses the preparation required to create a winning proposal as well as the different parts of a proposal itself.

Basic Elements of Grant Writing http://www.cpb.org/grants/grantwriting.html
The Corporation for Public Broadcasting is a funding organization that reads hundreds of applications every year. They have created a guide that helps CPB grantseekers and applicants to other organizations.

EPA Grant-writing Tutorial http://www.epa.gov/seahome/grants/src/grant.htm
From the Environmental Protection Agency (EPA), this tutorial provides users much of the same information found in other guides but in a different format. The site leads users through a grantwriting activity while offering tips and examples on different screens.

Grant Writing Tools From The Web
http://www.enc.org/professional/funding/funding/document.shtm?input=FOC-000767-index
Various Internet sites provide concrete advice on writing grant applications.

Knowledge Transfer Center http://www.t2ed.com/
This technology transfer program shares ideas and products developed through federal funds at a Department of Energy project in New Mexico. One of the products disseminated through this web site, which requires free registration, is GRANTSAT, an assessment to use on your grant proposals before you submit them.

The Grantwriter's Bookshelf
http://www.enc.org/professional/funding/funding/document.shtm?input=FOC-000768-index
Reviews of several current books that guide you step-by-step through the grantwriting process.

Writing a Successful Grant Proposal http://www.mcf.org/mcf/grant/writing.htm
The Minnesota Council on Foundations has created this guide for grantseekers in Minnesota, but like other sites listed here, the information is useful for many applicants. (K. DeCorte)
The Foundation Center http://fdncenter.org/

This organization was established in 1971 to help bring grant seekers and grant makers together. The home page offers links to training opportunities, publications available, and the Philanthropy News

Digest, which contains news about the latest grants available. The next link leads to grant maker web sites as well as three other search tools for locating grants tailored to your organization's needs. The Foundation Center's Learning Lab offers a virtual classroom with thirteen guides and tutorials, including an orientation to grant seeking, budgeting basics, and proposal writing. A research link lists statistics for top foundations and their recipients by geographic area, subject area, population served, and recipient type through the year 2000. Over 1,300 tables are available, including the "Top 50 Arkansas Foundations by Total Giving." Guidebooks and directories are available through the Foundation's Marketplace. This web site offers in-depth information for anyone interested in obtaining or providing grants. As a novice grant writer, I found the tutorials especially helpful. (R. Wolf)

Gay, L.R. *Educational research: Competencies for analysis and application*. 5th ed. Upper Saddle River, NJ: Prentice Hall, 1996.

Gay's text is an excellent introduction for aspiring researchers. The text covers both qualitative and quantitative research, and Gay has done a fine job of organizing the material so that it builds incrementally on the information attained in previous chapters. Gay also displays a refreshing sense of humor, perhaps in anticipation of students' apprehensions about academic research (for example, the subtitle for the section on Data Analysis is "The Word is 'Statistics,' not 'Sadistics.'"). Also, each chapter begins with an illustration drawn from popular culture in order to play off students' preconceptions of research theory.

At times, Gay's approach is too playful and subjective. However, for the beginning researcher looking for a solid, inviting, and informative text, *Educational Research* is both beneficial and relatively painless. (H. Smiley)

This was my text when I had Research Methods. It has been five years since I had Research Methods. Needless to say, I had forgotten much of the terminology. This text was very helpful for reviewing and refamiliarizing me with the different research techniques. (R. Gray)

Geever, J. C. (2001). *Guide to proposal writing, 3rd Ed*. The Foundation Center: New York.

This is the third edition of this guide which indicates its wide spread use. The author presents the proposal writing process with the grant makers ideas and responses to assist the proposal writer a better opportunity to be funded. Each step of the process is clearly organized from getting started to the packaging of the proposal. Contacting and cultivating potential funders and researching potential funders and what the funder have to say will be a big help to the acceptance and funding of any proposal. A sample proposal and selected resources are described. This is an easy to read and understand text on a process that is gaining more attention in the fundraising arena. (C. Taylor)

Grants Hotline. http://www.grantshotline.com.

Great site! This is a site published by Quinlan Publishing Company. On the home page of this site, you can see grants for K-12, grants for cities and towns, private schools, and higher education. You do have to subscribe to receive this newsletter, but it might be worth the money! You can print out a sample of the newsletter to see if you like it. I have bought several things from this company and have

always been pleased. I will bring a sample for you to look at this week. PS. This company has books to buy to help you with writing your grants also. (C. Viala)

The Grantsmanship Center. http://www.tgci.com

The Grantsmanship Center styles itself as "the world's leader in grant information and grantsmanship training." The Center provides numerous helpful resources, including workshops, a website, and a free electronic newsletter subscription. Based on personal and peer experience, the basic workshop on writing grant proposals is must-have training for anyone who seeks grant funding. Other training opportunities and schedules, the daily Federal Register, information on becoming a 501(c)3, newsletter archives, and much more are all available at the website. (E. Wootten)

Guide for Writing a Funding Proposal. **http://www.learnerassociates.net/proposal/links.htm**

This site offers a variety of links to proposal writing resources. The site hyperlinks twenty-one additional sources that cover the key elements of grant writing. It is loaded with information from examples of actual proposals, to specific suggestions to ways to enhance your proposal. Some of the sites include: Grants Central Station, Elements of a Grant Proposal, The Proposal Checklist, Proposal Writer's Guide, and Beginners Guide to the Research Proposal This site is an excellent source for anyone who is writing a grant for the first time. (S. Y. Parchman)

Hall, Kelly. (2001, April). Grants Management at Community Colleges. ERIC Digest. http://www.ed.gov/databases/ERIC_Digests/ed455903.html

ERIC, the Educational Resources Information Center, created this Internet address. Included are general tips for effective grants administration, evaluation of grant guidelines, sources for grants, and proposal writing. Nine other Internet sites are listed in the literature. This web page has a wealth of information for anyone who is making his or her first attempt at writing a grant. The Digest summarizes the basic principles of grants funding development at community colleges. The author was a grant writer at a community college and was the editor of a grants information newsletter. (D. Millard)

McMillian & Schumacher. (2001). Research in Education: A Conceptual Introduction. Fifth Edition. New York: Addison Wesley Longman. ISBN: 0-321-08087-4.

This is an informative reference book with many illustrations on writing the dissertation and research proposals. The text is rich in details and easy to understand. The design is such that each section of the dissertation, and research proposal are detailed and examples given. The text also addresses both qualitative and quantitative studies. I used this in Qualitative and I believe you will find it helpful. (C. Overton)

National Center for Educational Statistics. http://nces.ed.org

This federal government entity, which collects and analyzes all sorts of data on education, kindergarten through higher education, is a very useful source for my academic research. I go here to get data on

Arkansas and national trends to support grant proposals and other research projects. Using the site takes some practice, but if you keep hunting you can find not only data and data analysis, but also carefully described methodologies used in collection and analysis. The Center provides analysis summaries and more detailed reports, along with tables, charts, and other statistical support. An especially helpful NCES resource is their National Education Data Resource Center, which will conduct customized data analysis for educational researchers upon request. When I start any research on education issues I go to this site first for basic information. (P. Ramsey)

Peterson, S. (2001). *The grantwriter's internet companion: A resource for educators and others seeking grants and funding.* Thousand Oaks, CA: Corwin Press, Inc.

Dr. Susan Peterson, the author of this text, is the Director of the Center for Academic Excellence at the University of Central Arkansas. This book is an informative and reader friendly resource for those interesting in grantwriting. It is not a "how-to-write" grants book, but it is intended to be used as a resource to help locate funding sources. In addition, there is an especially useful chapter pointing the Internet user to online book sellers, journals, and publishing companies. The author reminds the reader that because the Internet is always in a state of transformation there may be sites listed that have changed addresses or perhaps have even disappeared. I purchased this book when it was initially published in 2001 and continue to use it. It was a favored resource for some of the teachers in my building who were interested in writing grants. (D. Barrow)

Research Methods Knowledge Base. (2002). http://trochim.human.cornell.edu/kb/

The Research Methods Knowledge Base is a comprehensive web-based textbook that addresses all of the topics in a typical introductory undergraduate or graduate course in social research methods. It covers the entire research process including: formulating research questions; sampling (probability and nonprobability); measurement (surveys, scaling, qualitative, unobtrusive); research design (experimental and quasi-experimental); data analysis; and, writing the research paper. It also addresses the major theoretical and philosophical underpinnings of research including: the idea of validity in research; reliability of measures; and ethics. It uses an informal, conversational style to engage both the novice and the more experienced student of research. It is a fully hyperlinked text that can be used as a sourcebook for the experienced researcher who simply wants to browse. (M. Ward)

Ries, Joanne B., Leukefeld, Leukefeld, Carl, G. (1998). *The Research Funding Guidebook: Getting It Managing It and Renewing It.* Sage Publications.

This book is a very comprehensive source of information. Part I is a good section on resubmitting an application using the applicator's score. Chapters 2 and 3 go on to help the applicant respond in effective ways to use the comments of the reviewer and modifying the application. The authors include the psychological aspects and networking of people involved as well, in a practical way. The book reinforced many of the comments made by the grantsman that spoke to the Advanced Research class. The authors especially go into the system and making effective organizational relationships. The book further covers the handling of the grant after getting it, from financial procedures to personnel. Research and creativity add to the completeness of the source.

Riley, R.W., Smith, M. 1998. What Should I Know About ED Grants? U.S. Washington, D.C: Department of Education. Available http://www.ed.gov/pubs/KnowAbtGrants/covpg.html (N. Sherwood)

School Grants: Grants and Opportunities for K-12 Schools. **http://www.schoolgrants.org**

This site is a collection of resources and tips to help K-12 educators apply for and obtain special grants for a variety of projects. The site offers a variety of services such as grant opportunities, grant writing tips, sample proposals, and writing a grant CD. (S. Y. Parchman)

www.schoolgrants.org

This website provides information on the availability of grants to educators of K-12 programs. The site was created in 1999 as a way to share grant information with the goal of sharing information. SchoolGrants allows the novice grant writer to access grant writing tips, listings of grants available across the United States, federal grants, foundation grants, grants specific to states, or specific groups. They also provide examples of successful grant applications. I found this site to be informative in the process of writing and developing a grant proposal. (K. Broadnax)

U.S. Department of Education Electronic grants (e-GRANTS). (2002). http://e-grants.ed.gov/

This is the United States Department of Education computer system. Access to this system is restricted to authorized personnel on official government business. The site is organized into four search areas and is easily navigated by following the links to e-Application, e-Reader, e-Payments and e-Reports. Each link provides a user guide with information ranging from registration to the submission of grants. The e-Application, formerly e-GAPS, is an expanded pilot program for the 2002 fiscal year. This is part of the ED move to a paperless environment. There is also an e-Application demo, which allows the applicant to practice editing and submitting an application. Help is also available on-line through a Help desk. What is key to this program is that only a select group of competitions is available online. The e-Application website also has specific hours of availability, based on Washington DC time. This format also allows multiple users to access an application according to their assigned privileges. This feature allows several individuals to collaborate on a grant application. This site is worth visiting for an experienced grant writer. (K. Broadnax)

Walker, R. W., & Ruszkiewicz, J. (2002). Writing@online.edu. New York: Longman.

Don't be deceived by the clever title; it's a book. This handy, 4" x 8 " spiral-bound reference book/guide is the answer to every researcher's needs when determining how to use and cite electronic references, no matter what the discipline. The text provides straightforward help in locating and evaluating on-line resources, insights into designing successful research projects, and comprehensive coverage on documenting electronic resources using MLA, APA, CMS, CBE, and Columbia On-line styles. Information on the Ethics of Research, including issues of Intellectual Property Rights, Fair Use, and Copyright is included, with a particular emphasis on rights relating to materials researched on the World Wide Web. Tips are included for using Electronic Indexes and Databases, preparing formal

print documents, electronic documents in PDF formats, and WWW projects, including methods of presenting research via personal web sites, creating personal web sites, and publishing on the web. Writing@online.edu is a perfect tool for researchers who want correct, accurate documentation guides without all the hassle, with indepth resources for researchers of all skill levels. In addition, the publishers back up the authors' work with a handy-dandy link to a special web site that serves as an extra resource. http://www.awlonline.com/researchcentral (A. Holland)

In my never-ending quest for grant opportunities that require no effort on my part, but yield maximum dollars for my program, I ran across the following website AND its companion "How to Apply" site. The site is the Alfred P. Sloan Foundation's website and it has an excellent menu served up with healthy portions of nice-to-know information.

The main site is nestled on its perch on the world-wide-web at: http://www.sloan.org/main.shtml. The companion site is located with the perch at: http://www.sloan.org/grant/index.shtml.

One of the attractive things about this site is its easy-to-access companion sites. It provides a great deal of USEFUL information in standard English. I like that in a website.

If you want to see the programs the Alfred Pritchard Sloan, Jr. foundation supports click on Programs link. Are you curious about contacting the foundation for more information? No problem. Click on How to Contact the Foundation link. If you do not know how to apply for a grant with the Sloan Foundation, just click on How to Apply for a Grant. Find out who is on the Board of Trustees, or the names of Officers, Program Directors, and Biographies. Do you want to work for the foundation? No problem. Just click on Employment Opportunity. This site even has 2001 Annual Report and Prior Year Annual Reports for you to examine. (J P Walsh)

A great site I've found is located at: http://www.umass.edu/research/ora/dev.html It is titled "Proposal Writing and Research Development." Categories under the main title include Proposal Development Tools, Helpful Agencies, Helpful Resources, and Other Useful Sites. This site has a great selection of options to look at--all the way from looking at how to write a grant proposal, to where to look for funding sources, to information on how to submit the final product. The website is easy to navigate, and the various sections of topical information are extremely reader-friendly. There is even a section on "What To Do If You Did Not Succeed"--which gives more great info, particularly for a novice grantwriter, on how best to continue on or get feedback on your current proposal. I this site will be a great source of help in current and future research and grantwriting. (P. J. White)

http://www.csulb.edu/~msaintg/ppa696/696menu.htm#PPA 696

This site is an online course on Research Methods by Professor M.A. Saint-German at CSULB. It is an excellent source for those who want to review basic research concepts. The course is organized by topic is a manner that is easy to access. There are copies of handouts, course notes on almost every research method topic, including statistical procedures, and even articles with specific critiques. The concepts are easy to understand and have helpful charts that are interspersed throughout the text. The course starts with the basics of research and measurement, discusses the pros and cons of different experimental designs, describes various data collection techniques, gives the basic information needed for successful data coding/data entry, and finishes with advice on writing the research paper. (B. Doan)

Hello Folks, Working with the Winthrop Rockefeller Foundation on a school project peaked my interest about his philanthropy. I located this website that may be of interest if you are seeking grant funding. The Rockefeller Brothers Fund's website contains general information, guidelines, procedures for application, etc. Grant seekers will find information about recent grantees.

http://www.rbf.org/programs/index.html (A. Henderson)

The following web sight http://www.npguides.org is a free web-based grant writing resource for non-profit organizations, charitable, educational, public organizations, and other community minded groups. It is designed to assist established non-profits through the grant writing process. If you go to related links there are a number of agencies and foundations that have funding available. I really enjoyed this site and hope you find it useful. (I. Tatom)

Creative Research Systems http://www.surveysystem.com/index.html. This is an interesting site in which an individual can purchase survey software that gives great ideas for conducting survey research, covers sample size, avoiding biased samples, survey methods (phone, mail, internet, etc), questionnaire design, item types, statistical significance and online software for finding sample size. (K. Taylor)

STUDENTS WITH DISABILITIES

It is the policy of UALR to accommodate students with disabilities, pursuant to federal law and state law. Any student with a disability who needs accommodation, for example in arrangements for seating, examinations, note-taking, or access to information on the web, should inform the instructor at the beginning of the course. The chair of the department offering this course is also available to assist with accommodations. Students with disabilities are encouraged to contact Disability Support Services telephone 501-569-3143 (v/tty), and on the Web at **http://www.ualr.edu/dssdept/**.

It is the policy and practice of UALR to make all web information accessible to students with disabilities. If you, as a student with a disability, have difficulty accessing any part of the online course materials for this class, please notify the instructor immediately.