Introduction to Graduate Research Methods
SRM 600

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COURSE DESCRIPTION
SRM 600 Introduction to Graduate Research (3 credits). Principles of research, design, and analysis. Read and critique published research. Required of all first year graduate students.

What this Course is About: Generally, we disseminate new information we have learned through research articles in our professional literature. As professionals in our fields holding advanced degrees, we are usually obligated in our professions to remain current and to keep up with the latest research findings. We need to be able to read the research articles and listen to professional presentations as critical and informed consumers of such information. This course shows you what good research is, how it is done, and what to look for that helps you understand the results being presented. The skills you acquire in critically analyzing and using the results of research are invaluable. This is particularly so because not all published research is very useful or even well done. Ultimately it is you who must evaluate and use or discard the results of researchers. You need to become capable of critically evaluating the work of others. That is what this course is designed to help you do.

REQUIRED MATERIALS

A digital version of the book is available to rent for 180 days from the publisher for $71.49

SOFTWARE: Microsoft Excel with Data Analysis installed. (It is not necessary that you purchase this, but you will want to have access to it for about three weeks for this course. We’ll walk through the Data Analysis add-on).

COURSE OBJECTIVES
The primary objective of the course is to equip the student with the necessary skills, concepts, and understanding of research methodology to evaluate and use the research in his/her discipline. Inherent in this broad objective is an ability to do the following:

1. Critique the problem and hypothesis of a research study.
2. Critique the review of literature to determine if it fulfilled the purpose of this phase of the research study.
3. Critique the definition of the population and the sampling procedure including its size to determine if valid conclusions can be drawn.
4. Critique the data-gathering devices and procedures for collecting data with criteria learned from class and readings.
5. Critique the general design of the study to insure that correct conclusions are possible from the statistical analysis.
6. Critique the statistical analysis procedures to establish their valid use in the study.
7. Critique the conclusions and interpretations to insure correctness of each.

**ADDITIONAL STATEMENT OF OBJECTIVES:** Your opportunity to demonstrate your mastery of the 7 objectives above is built in to research critique assignment that you will turn in at the end of the course. Your citations are to include comments of critique regarding the technical adequacy of the studies.

**OVERVIEW OF COURSE CONTENT**

**TEXTBOOK CHAPTERS:** We will cover and have tests over the first 15 chapters of the Ary textbook. I suggest you take a quick read of Chapter 17 and also Chapter 21. They will be useful to you in evaluating our articles in the threaded discussions of Units 5 - 8 and as you evaluate the research articles you include in your research critique. Also have a quick read of Chapter 20 because it contains important useful information about writing grant proposals, ethical matters, and the like. However, you will be tested only over Chapters 1 through 15. You might also look at Chapters 16, 18, 19, and the first half of 17 if you find them of interest.

**UNITS:** The course is divided into 8 units. We will keep to a timetable of covering 1 unit per week or week and a half. Please see the COURSE SCHEDULE (in the Menu on the left) for dates and deadlines.

- **UNIT 1** Chapters 1, 2, and 3
- **UNIT 2** Chapters 4 and 5
- **UNIT 3** Chapter 6
- **UNIT 4** Chapter 7
- **UNIT 5** Chapter 8
- **UNIT 6** Chapter 9
- **UNIT 7** Chapters 10 and 11
- **UNIT 8** Chapters 12, 13, 14, and 15

**READING ASSIGNMENTS AND EXERCISE:**

**A NOTE ABOUT READING ASSIGNMENTS AND INSTRUCTIONAL OBJECTIVES (IOs) IN ARY:** All reading assignments and instructional objectives mentioned below have been put into 1 of 3 categories: VI (very important), MI (moderately important), and LI (least important). Tests will draw about 80% from VI, 19% from MI, and 1% from LI. If an IO is not listed, it is not important at all. Initially look over the organization of a chapter and concentrate your reading on the material relating to the VI and MI Objectives. Specific instructional objectives are presented at the beginning of each chapter in the textbook, and those that are most important are identified below with a VI.
Chapter 1 - The Nature of Scientific Inquiry
Read all of the chapter
VI: Instructional Objective (IO) 2
LI: IOs 1, 3-6
Know all Key Concepts following the summary

Chapter 2 - Research Approaches in Education
Read all of the chapter
VI: IOs 1-10
Know all Key Concepts following the summary - you will see them again and again throughout the text
Work Exercises 1, 2, 3, 4, 6, 7, 11, 13, 14
(note that answers follow all exercise sets)

Chapter 3 - The Research Problem
Read all of the chapter
VI: IOs 1, 3, 5, 8, 9
MI: IOs 2, 6, 7
Know all Key Concepts
Work Exercises 1, 5, 6, 7, 8, 9

Chapter 4 - Reviewing The Literature
Read all of the chapter
VI: IOs 1 and 2
MI: IOs 3 - 12
Also read through the exercises and their accompanying answers

Chapter 5 - The Hypothesis in Quantitative Research
Read all of the chapter
VI: IOs 1, 2, 5 - 13
LI: IO 3, 4
Know all the Key Concepts
Work Exercises 1, 3-8, 10

Chapter 6 - Descriptive Statistics
Read all of the chapter
VI: IOs 2 - 5, 9, 11, 12, 13
MI: IOs 1, 6, 10 LI: IOs 7, 8, 14
Know the Key Concepts
Work Exercises 1 - 6, 8a, 10, 12, 13a, 14 – 20

Chapter 7 - Sampling and Inferential Statistics
Read all of the chapter
VI: IOs 4 - 10, 20
MI: IOs 1 - 3, 11 - 13
LI: IOs 14 - 17
Know the Key Concepts
Work Exercises 1-14
Concentrate on the material on pages 147 - 177.

Chapter 8 - Tools of Research
Read all of the chapter
VI: IOs 6, 7, 10
MI: IOs 1 - 4, 11, 12
LI: IOs 5, 8
Know the Key Concepts
Work Exercises 1 and 3

Chapter 9 - Validity and Reliability
Read all of the chapter
VI: IOs 1, 2, 7
Know the Key Concepts
Work Exercises 1-13

Chapter 10 - Experimental Research
Read all of the chapter
VI: IOs 1 - 8
Know the Key Concepts
Work Exercises 1 – 6

Chapter 11 - Experimental Research Designs
Read most of the chapter - see below
VI: IOs 1 - 4, 7
MI: IOs 5, 6, 8
Most Important Reading: Everything through and including Design 3, Quasi Experimental Designs and Design 9, and the Table with +, -, and ? marks and the material relating to it.
Work Exercises 1 – 5

Chapter 12 - Ex Post Facto Research
Read all of the chapter
VI: IOs 1 - 3, 7
Work Exercises 1, 3

Chapter 13 - Correlational Research
Read all of the chapter (if you are going to skip something, skip the material from Determining Sample Size to the end of the chapter)
VI: IOs 1 - 5, 7
Know Key Concepts that are in assigned reading that you shouldn't skip
Work Exercises 1-7, 9, 11, 13 - 15

Chapter 14 - Survey Research
Read all of the chapter
MI: IOs 1-6, 10, 12
Know Key Concepts

Chapter 15 - Defining and Designing Qualitative Research
Read all of the chapter
Know Key Concepts
Look at Exercises 1 - 4
You will be tested only over the first fifteen chapters in this course.

Chapter 16 - Types of Qualitative Research
Read all of the chapter

Chapter 17 - Analyzing and Reporting Qualitative Research
Read all of the Chapter

Chapter 18 - Action Research
Read all of the chapter

Chapter 19 - Mixed Methods Research
Read all of the chapter

Chapter 20 - Guidelines for Writing Research Proposals
Read all of the chapter

Chapter 21 - Interpreting and Reporting Results of Quantitative Research
Read all of the chapter

INFORMATION ABOUT THE TESTS
AND THE SAMPLE TESTS:
There will be 2 tests administered online. They will each consist of 50 multiple-choice items, carefully constructed to tap your knowledge of the important topics in the material that we covered. Take each test sometime within the 3-day interval that it is scheduled. The test will be scored and the score posted in the online gradebook. (To see your score, click on Communications and then click on My Grades.)

Test 1 will cover Units 1 through 4 (which is the material in the first 7 chapters of Ary).
Test 2 will cover Units 5 through 8 (Chapters 8 through 15). Be sure to see the next section (TEST SPECIFICATIONS) that describes the composition of each test by topics and numbers of items pertaining to those topics.

The tests will be timed. You will have 2 hours to complete each test. The time limit is generous; please do not exceed it. Be sure to proceed through the whole test in a timely fashion so as not to leave questions at the end that you do not get to. As you prepare for the tests, do so as if they are closed book exams. You must understand ideas and concepts. When you take the exams, you are free to use your notes, your textbook, and the course materials to look things up. You may not use any other source, person(s), or materials. Know the material so well that you don't have to use your reference materials much or you will run out of time.

There are 4 online sample tests available for you to "practice", if you desire, prior to taking the actual tests. They are only 15 to 20-item tests. Although these sample tests cover the content that the actual tests cover, they are not subject to the same standards of breadth and depth of complete coverage of content as the 50-item actual tests. They are intended for you to understand the format and nature of the items, and not intended to appear to represent the course material completely. They may also contain an item or two that is slightly more difficult than those on the actual tests. Our intent is that the actual tests will be no more difficult than their corresponding sample tests so that if you have performed on a sample test in a manner that you like, there will be a good chance that you will do as well on the corresponding actual test.

The online sample tests may be taken as many times as you wish. These sample tests will be scored and answers will be provided as a means for you to study the material further if you like. You can go into the gradebook and look at the scored sample test items. You can also take the sample tests again if you want. (To see the sample tests, along with the questions and answers, go to My Grades in Communication.) These scores are NOT part of your grade.

The actual tests will be scored and answers provided so that you can see what you missed. These actual tests are designed to be "power" tests that provide us with measures of how much you know. Please see the section below entitled OUR TESTING PHILOSOPHY for amplification of these ideas. The score for your test will be given to you when you submit the test; it is also available in the gradebook.

The sample tests are located in Course Units, within the material for Units 2, 4, 6, and 8. You may enter them and take them as often as you like. The actual tests are located in Units 4 and 8. DO NOT enter them until you are ready to take them - you have only one opportunity to take each one.

**TEST SPECIFICATIONS:** The actual tests will have 50 items each, broken down by general topic approximately as follows:
**Test I**

<table>
<thead>
<tr>
<th>Chapter</th>
<th># of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1 -- Scientific Inquiry</td>
<td>1</td>
</tr>
<tr>
<td>Scientific Method</td>
<td>1</td>
</tr>
<tr>
<td>Chapter 2 -- Research Approaches in Education</td>
<td>3</td>
</tr>
<tr>
<td>Types of Research</td>
<td>3</td>
</tr>
<tr>
<td>Terms</td>
<td>3</td>
</tr>
<tr>
<td>Types of Variables</td>
<td>3</td>
</tr>
<tr>
<td>Chapter 3 -- The Research Problem</td>
<td>1</td>
</tr>
<tr>
<td>Purpose</td>
<td>1</td>
</tr>
<tr>
<td>Chapter 4 -- Reviewing the Literature</td>
<td>1</td>
</tr>
<tr>
<td>General Searching</td>
<td>1</td>
</tr>
<tr>
<td>General Info</td>
<td>1</td>
</tr>
<tr>
<td>ERIC</td>
<td>3</td>
</tr>
<tr>
<td>Chapter 5 -- The Hypothesis in Quantitative Research</td>
<td>3</td>
</tr>
<tr>
<td>Criteria</td>
<td>3</td>
</tr>
<tr>
<td>Types</td>
<td>4</td>
</tr>
<tr>
<td>Reject/Retain</td>
<td>2</td>
</tr>
<tr>
<td>Chapter 6 -- Descriptive Statistics</td>
<td>4</td>
</tr>
<tr>
<td>Center/Variation</td>
<td>2</td>
</tr>
<tr>
<td>Distributions</td>
<td>2</td>
</tr>
<tr>
<td>Standard scores</td>
<td>4</td>
</tr>
<tr>
<td>Calculations</td>
<td>4</td>
</tr>
<tr>
<td>Correlation</td>
<td>3</td>
</tr>
<tr>
<td>Measurement Scales</td>
<td>2</td>
</tr>
<tr>
<td>Chapter 7 -- Sampling and Inference</td>
<td>4</td>
</tr>
<tr>
<td>Sampling</td>
<td>4</td>
</tr>
<tr>
<td>Types of Tests</td>
<td>1</td>
</tr>
<tr>
<td>Statistical Significance</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL** 50

**Test II**

<table>
<thead>
<tr>
<th>Chapter</th>
<th># of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 8 -- Tools of Research</td>
<td>4</td>
</tr>
<tr>
<td>Characteristics and Types of Tests</td>
<td>4</td>
</tr>
</tbody>
</table>
Errors 1
Rating scales and Likert scales 2
Chapter 9 -- Validity/Reliability
Reliability 4
Validity 5
Relationship of Validity to Reliability 3
Standard Error of Measurement 2
Chapters 10 and 11 -- Experimental Research and Experimental Designs
Characteristics of Experiments 5
Internal/External Validity 2
Independent/Dependent Variables 1
Chapter 12 -- Ex post facto Research
Characteristics of Ex post facto 4
Distinguish ex post facto & experiment 1
Chapter 13 -- Correlational Research
Characteristics of Correlational 3
Chapter 14 -- Survey Research
Characteristics & issues of survey research 5
Chapter 15 -- Defining and Designing Qualitative Research
Characteristics of Qualitative Research 8

TOTAL 50

PHILOSOPHY OF TESTING
Tests in this course are for assessing your knowledge of the ideas related to this course, the amount and nature of your knowledge, and how well you can use your knowledge to address new issues, solve problems, and apply it to novel settings. As a graduate student you have been successful in educational settings, partially because you generally will do what you are asked to do in a course. I am willing to stipulate that if I ask you to DO something that you will do it. You are already skilled at doing this. What I am looking for is for you to BE something. That something is: Knowledgeable about research methodology. I want you to know the terms and concepts, I want you to be able to read, appreciate, understand, and critically analyze scholarly works including research reports. I want you to be capable of reading new material in your field critically. In short I want you to be knowledgeable about the latest developments in your field, I want you to be able to read critically the research that others report in your field, and I expect that you may someday be able to produce research for the benefit of others.
My approach to testing is to use well-written multiple choice tests using items that not only assess how much you know about what we have been studying, but how well you can think with and use the information. Such tests continue to be the most accurate way the measurement field has of assessing knowledge. The central idea behind well-written 50-item or 100-item multiple choice tests is that the more you know and understand about research and its methodology, the more items you will answer right, and the higher your score will be. Given no prior knowledge about the test items, if you answer most of them right, you know a lot. However, if you have seen the items before, and you answer them correctly, you may actually know very little about research. Or if you miss 6 items and I supply you with the correct answers, you may know a little more and have benefited somewhat from going through this exercise, but your basic level of knowledge has not changed much, if at all. I treat the tests as "power" tests, that is, they give me a measure of how much you know. And I use them in this course as such. I do not think of these tests as learning experiences; they are outcomes measures.

With these ideas in mind, I have developed, and continue to develop, an item pool that contains items that capture the essential ideas that I believe are important, that are slanted to our approach and language, and that tap your knowledge at the level of understanding that I am comfortable is befitting graduate level understanding of research methodology. I strive for error-free tests that contain no typos, no ambiguous items, no tricks, etc. I do not believe it is fair to draw randomly from this pool to test members in a class with tests composed of different items. Some items are simply harder than others, and some students would be disadvantaged relative to others in the same class if I did this. Therefore, I select what I think is a "perfect" set of items for the class that I am currently working with and I administer the same test to everyone. With respect to improving items for eventual later use again in two or three years, this is good measurement practice.

In an on-line course where the tests are not proctored, it is important that for this testing procedure to work that the items, indeed the tests, remain absolutely secure. That is to say, that no one talks about tests or items to anyone else -- ever; that no items are written down or copied; that no conversations take place about tests or items between any persons; and that information about tests and items is passed on to no one. I expect that you will honor this.

GROUPS
The online sections of this course have become so large that threaded discussions have become too lengthy when everyone is participating. To keep these conversations manageable, the class will be divided into groups. You will get your group assignment early in the course. Each group will have its own threaded discussions. You will enter these through the menu item Communication, then Group Pages, and finally your group. You may also click Groups in the main menu to get to the Group Pages.

GRADING PROCEDURES
Your grade in this course will be determined based on the results of 2 online tests that you will take, a research critique of at least 6 items that you will prepare and turn in, and on your participation in the discussion forums (threaded discussions) that will be available each week throughout the course. The tests, article critiques, and discussion forums are described in detail below in other sections of this syllabus.

You must take 2 online tests. They will each consist of 50 carefully written, multiple-choice items. There will be a test over Units 1 through 4 and a test over Units 5 through 8. A letter grade for the tests will be determined by taking the total number of points possible (100) using a cutoff of 88 for the A categories, 76 for the B categories and so on. Now that UNC uses a plus-minus grade, the ranges for these test grades will be 96 and above for an A+, 92-95 for an A, 90-91 for an A-; 86-89 for a B+, 82-85 for a B, 80 - 81 for a B-; 76-79 for a C+, 72-75 for a C, 70-71 for a C-, and so on. This will be your TEST GRADE. This TEST GRADE will become your COURSE GRADE subject to what you do with the research critique and discussion forum assignments.

You are required to prepare a research critique of 6 articles or more. Please see the Research Critique section of this syllabus below for details. This must be prepared and sent in prior to the deadline shown in the course schedule. If you turn in a critique of 6 items or more, your COURSE GRADE will be your TEST GRADE. If you choose not to do the research critique, your COURSE GRADE will be your TEST GRADE lowered by 1 full letter grade. (If you got an A+ on the tests, and didn't want to do the critique, you would have a B+ for your COURSE GRADE.) However, if you prepare a research critique of 12 items, your TEST GRADE will be increased by 1 full letter grade to arrive at your COURSE GRADE. You may decide to do this even after you have seen your test results if you like. Remember that regardless of how many articles you include in the critique, they must all be research articles with your remarks addressing the technical adequacy (not just pedagogy) of the article. You may choose to increase your letter grade by a partial amount (say from B to B+). To do this, submit 2 additional articles critique items for a total of 8. Submit 4 extra items (for a total of 10) to move a grade two partial grades (say from a B to and A-). The maximum increase possible is 1 full letter grade - submit 6 extra items for a total of 12 items.

I want you to participate in a CONSTRUCTIVE way in the discussion forums and to co-moderate a discussion forum when it is your turn. If you do, your COURSE GRADE will be that determined above. If you do not, your COURSE GRADE will be lowered by one full letter grade or more from that determined above. If you contribute constructively to at least 6 of the 8 unit discussions and conscientiously execute your moderator assignment, this will be sufficient. Please read the Threaded Discussion section below that describes the online discussions in detail and my expectations for your participation in them.

That's it. In summary, study those things I have identified as important so that you can do well on the tests. Your COURSE GRADE will be your TEST GRADE unless you choose not to turn in a research critique or participate in the discussions, or both; then your grade would be lowered by one or more full letter grades. If you choose to participate in the discussions and turn in a critique of 12 items, your COURSE GRADE will be your
TEST GRADE increased by 1 full letter grade. And if you choose to participate in the discussions and turn in a bibliography of 8 or 10 items, your COURSE GRADE will be your TEST GRADE increased by one or two partial letter grades. (Please note that UNC does not record an A+ as an A+, it is recorded as an A on your transcript. All other plus and minus grades are recorded as plus and minuses.)

THREADED DISCUSSIONS
INTRODUCTION: In each of the 8 units, there is a discussion board (sometimes called a threaded discussion or a discussion forum) that will be active during the time that the unit is assigned. Although it will remain available throughout the course, a meaningful discussion will not continue for longer than the time assigned to the unit and the topic. Participate during the assigned time to receive credit. Some of the discussion boards present a topic to be discussed and others ask that you read an article in the Course Documents section and either comment on it or critique it. In all 8 units, be sure you ask your questions about the chapter content that we are covering in the unit. Read the Threaded Discussions and Moderator Duties sections below for more information.

THE DISCUSSIONS: You are expected to participate in a series of 8 threaded discussions, one for each unit of the course. I expect that you will contribute to the discussions, use them to help clarify occasional fuzzy ideas by asking your questions no matter how elementary you feel they are and by answering questions posed by others if you think you know the answers, and to gain an understanding of the concepts from each other and from me. Most of the discussions will begin with questions posed or activities suggested to the group by the instructors and will be co-moderated by two or three group members.

Please adhere to the following guidelines as you participate in the threaded discussions:

1. Plan for each threaded discussion to continue for the entire time assigned to that unit. You will notice in the Course Schedule that we have scheduled a break day between units.

2. Participants' comments and questions should be thoughtful and clearly stated. It is important to take the time to post messages that reflect critical thinking skills and that are carefully written. Note there is a spell check available - please use it. It is not great, but it is much better than no spell check.

3. Please take extra care to be considerate of each other. This is especially important in threaded discussions because emotions are difficult to communicate. Sometimes even carefully worded critiques, meant in a supportive and positive way, lead to misunderstandings and/or hurt feelings. Please see the following additional resources: http://www.kent.edu/technology/etiquette.cfm http://online.uwc.edu/technology/onlineetiquette.asp

4. In order to get credit for a threaded discussion, you must participate at least two times in the discussion and in a meaningful way, unless you are the moderator (then you will participate much more often). That is, you will not be given credit for comments such as “I agree” or “I’ll get to this later” or for the vote that you’ll cast for units 5-8. I recommend that you monitor the discussions frequently and post your comments and questions as often as you desire. This is your only guided opportunity for interaction
with the other students in the class and I am confident that these discussions will enhance your learning substantially. I value highly the benefit of discussing these ideas, especially for those of you who are experiencing them for the first time. Especially valuable are the contributions participants make early in the discussion that help the moderators get the discussion rolling - everyone should take their turn getting into the discussions early to contribute in this manner.

5. As the instructor, I will monitor the discussions for accuracy and will participate (not monopolize) in them regularly. I am interested in your conceptual understanding and this is one of the ways in which I can support your learning. You can't go wrong here - if you answer a question incorrectly or not fully, you risk nothing - you may as well try. I'll keep an eye on things and "correct" any mis-information.

6. Threaded discussions will remain available but will not be active after the assigned week. Moderators are not asked to monitor the discussion after the assigned week nor will class members be expected to participate in the discussion; you should not plan to "participate" when the rest of the class has moved on. If you have a question relating to an earlier discussion, just bring it up in the next unit's discussion.

**MODERATOR DUTIES:** Each of you is expected to moderate one threaded discussion during the course. Assignments will be made on a volunteer basis, so you will be able to make your assignment work for your schedule. Watch for the call for volunteers about the first week of the course. You will moderate your group's discussion with at least one other person. The expectations/duties for a moderator are:

1. Communicate with the other moderator(s) in your group so that you can coordinate your efforts.
2. Contact everyone in your group when your unit starts or the day before, letting them know who is moderating and what you will be discussing. Do this by email from your Group Page and post a message of welcome in the threaded discussion.
3. Check in on the discussion forum every day. If you cannot check in, be sure the co-moderator is available to do that.
4. Keep the discussion moving along and focused on the research topics. If the discussion digresses to other issues at the expense of the discussion, it is your task to direct everyone back to the discussion. Sometimes the other issues are important but they can be dealt with in a different way (such as email).
5. Take stock of the discussion every few days. What issues still need discussion? Is there consensus on others?
6. Encourage your group members not to repeat things that others have said but rather to bring up questions from the readings or even other articles.
7. Guide; lead; pose questions; make helpful comments; encourage; model. Be the facilitator. It is not your job to be able to answer everyone's questions, but if you can, do so.
8. About halfway through the unit, contact (by email) group members who haven't joined in the discussion. Be a gentle prodder though - everyone seems to have packed schedules these days. But it really helps the discussion to have more voices.
9. Of course, I will be following the discussion, joining in when necessary.
However, if someone asks a question that you & others can't answer, please draw attention to it in the discussion. Usually I'll notice right away but I want to allow the learning process to work without my interference if it can. I believe it is very important for you to discover things on your own but I am mindful of the sense of frustration that occurs when you have to struggle. You will probably notice me in the discussion during Units 3 and 4 more often than the others; these are the statistics units and I want to help in this as much as I need to.

10. Moderators for the last 4 units will be facilitating research article critiques. When you read the online Introduction to Unit 5, you will notice that it directs you to several documents in Course Documents that describe the activity. If you read the Cunningham article, an example critique is provided for you. The process essentially works like this: everyone will read an article and post comments and questions in the threaded discussion. The moderators will keep the discussion moving along as usual and will summarize the issues toward the end of the Unit. The moderators will then "call for the vote" and everyone will respond with their vote: (to publish, to revise, or to reject). Moderators will report the decision on the article to everyone (either in the discussion or by email or both). There are additional details about the article critiques in the Unit 5 materials.

11. Make an effort to be very well prepared in advance on your topic so that you can facilitate a lively, accurate, and beneficial discussion.

RESEARCH ARTICLE CRITIQUE INFORMATION
The intent of this project is to get you into an academic library (either live or electronically or both) to acquaint yourself with some of the materials used in research and to read and critique a few research journal articles related to your field of interest. While you may have done a fair amount of library work before, plan to spend a substantial amount of time with this project, and use it to further your understanding of the research process and your knowledge of your field in general. The real value of this project is not only what you may learn about the topics addressed in the articles, but what you acquire in the way of experience in critically evaluating the adequacy and technical merits of the research. As you will see in our threaded discussions, not all articles are well done - many are seriously flawed and maybe should not have been published (at least not without serious revision).
Find research articles in academic journals on any topic or topics that interest you, read them, and write brief descriptions of them. I expect that the articles you select will be research articles (reports of empirical research studies) and that several of them will be from the very recent issues of the journals. For each article, write the bibliographic citation for it and a paragraph or two about the article. Use the APA style for your citations. The critique may be as short as a paragraph of several sentences if that's what it takes to describe the article. If you find yourself writing more than 3 paragraphs you may be trying to include too much. However, if the critique is to be of value to you, you may wish to include more information in your description of the article than 3 paragraphs permit. Resist the temptation to just reproduce the abstract that precedes the article. Instead, read the article and attempt to capture its essence in your own words. You might wish to personalize your comments, e.g. how the article might affect
your own teaching or whether or not you agree with positions the authors took. Be sure to include your own evaluative remarks of technical critique - was the article difficult to read, were the measures described well, did the authors overstep their data in your judgment, was the experimental design appropriate, was the sampling of subjects appropriate for the design, were the conclusions justified based on the data, etc.? (have a look at p. 653-655 in Ary, for other ideas). It is important that you include your assessment of the technical adequacy or inadequacy of the article. That is, if you only discuss the educational content of the article, how you feel about that, and how it applies to your classroom/teaching, you will not receive credit for that critique. We will be assessing the technical merits of articles in the last 4 threaded discussions in our course - you will see clearly there what constitutes a technically well-presented article. You might consider looking up articles on a topic or topics of specific interest to you (academic or not). In this case, provide a brief statement of the theme(s) or topic(s). Or provide a formal research question if you like. You may wish instead to read a variety of research articles that are not related to a single topic - this is fine also.

In addition to reading some research articles for this project, I recommend that you have a look at the Encyclopedia of Educational Research. It is an amazing compendium of extensive literature reviews of more than 200 educational topics. Identify the articles in this encyclopedia that are of greatest interest to you, read them, and include them in your research critiques. Or have a look at Review of Educational Research - it contains timely encyclopedic treatments of major topics in education. Or have a look at Mental Measurement Yearbooks, look up some tests that are of interest to you, read about them, and report for each one its title, purpose, year, acronym, cost, a brief description, and reliability and validity information. If you are at an academic library that houses dissertations, pick one or two that are about topics that look interesting to you, read them, and write brief descriptions of these studies. Feel free to select other resources from which you might select articles or other materials to read.

I ask that you:

1. number your citations,
2. select materials of interest to you, read them, and write your brief summaries in your own words,
3. that you get the research critique to me on or before the deadline, and
4. send them to me as a unique email, (not as a reply to my final email request).

The research critique may be sent to me by email as an attachment. Deadline information is in the Course Schedule. This deadline applies regardless of whether you are sending in 6- article critiques that preserves your TEST GRADE or whether you are sending in 1) a 8-item bibliography to raise your TEST GRADE by one partial letter grade (like from an A- to an A), 2) a 10-item bibliography to raise your TEST GRADE by two partial letter grades (like from a B to an A-, or 3) a 12-item bibliography to raise your TEST GRADE by a full letter grade.
EXAMPLES OF RESEARCH ARTICLE CITATIONS WITH COMMENTS ON TECHNICAL ADEQUACY


   This study was specifically designed to analyze the efficacy of systematic direct instruction of multiple metacognitive strategies created to aid students in their comprehension of texts. The data collected through this five-week study resulted in the addition of "multiple-strategy use" as one of the eight effective strategies to aid students in their literacy development, as cited by the National Reading Panel (National Institute of Child Health and Human Development, 2000). The purpose of the study was to specifically investigate the reading comprehension and vocabulary development of 119 third grade (over six classrooms) students in two urban elementary schools in southwest United States. The pre-test and post-test results of students in both schools were analyzed to determine the effect of using metacognitive strategies to assist students in their comprehension of expository texts. I was rather confused by the purpose of the study. It seemed dichotomous to me, because as a literacy teacher, I question the possibility of direct instruction apropos to teaching the use of metacognitive strategies to students. Moreover, it also seemed confusing because I was not sure of the variable was comprehension of expository texts or vocabulary development, because the two can require very different strategy approaches. I would have gained more information from the article if there were clear descriptions of the setting of the study as well as a more detailed description of the characteristics of the intervention and the comparison group. The results were analyzed and indicated that the gains demonstrated through the performance of the intervention group (to which direct instruction in metacognitive strategies was given) were statistically significant, and through an additional analysis using a Binomial Effect Size Display (BESD), the intervention group showed a 40% difference in gain in vocabulary development and a 20% difference in gain in reading comprehension.


   The study authors referred to the design of this project as a nonequivalent control group design, which is a categorization that I am not familiar with. There were 2 treatments and 1 control administered at 3 similar WIC clinics in Los Angeles. Each clinic recruited postpartum women enrolled in WIC services, and one clinic sample received vouchers for fruits and vegetables to be purchased at a farmers market, one clinic sample received vouchers for fruits and vegetables for purchase at a supermarket, and the controls received a nonfood voucher for disposable diapers. The baseline, end
of intervention and 6 months post-intervention consumption of fruits and vegetables were assessed and compared. A mixed model approach was used to look at any changes in fruit and vegetable intake at the end of the intervention and 6 months after incentives were removed in order to account for intrasubject correlation (degree of similarity of participant responses within a group and across groups) and to adjust for covariates. The study showed that the farmers market and supermarket participants increased their fruit and vegetable intake during the intervention and maintained increased consumption over the control group 6 months post-intervention.

As mentioned with other WIC studies, the results of this study are very specific to the WIC program and its participants. The demographics of the participants in this study are not at all representative of WIC participants across the country - in this group close to 90% of the participants were Hispanic. As in other WIC studies, the majority of the data were self-report including dietary intake, causing much of the data to be questionable in regards to accuracy (although the researchers did do evaluations to ensure that energy intake reports were within plausible limits and tried to account for intrasubject correlation). One major question that was raised for me was how much of the fruits and vegetable incentives were actually consumed by the participant's other household members vs. the participants' consumption. The redemption of the vouchers was 90%, but that doesn't mean that the food purchased was actually consumed by the treatment groups only. Another limitation is that this study was conducted in an environment where fruits and vegetables are available in abundance year round and the consumption of these foods are more culturally accepted (particularly in participants who are recent immigrants). As far as study design goes, I would have liked to have seen a better randomization process for each treatment group, although that would have been a much harder design to implement within the normal clinic experience as the clinic specific sample group era.

Some of the main positive points that stuck out for me were the comments revealed in the interview of the "pleasant community experience" reported by the farmers' market shoppers. This group also had the highest prevalence of exclusively breastfeeding than the other groups. This study laid some great ground work in looking at the implementation of a fruits and vegetables addition to the WIC food packages. It will be interesting to see whether the increased intake will occur at the same level with the current additions, even though the nation wide intervention will be smaller dollar amounts for the vouchers and will not necessarily include farmers markets as venues for purchase.


This article draws on the results of an empirical study of students who failed standardized reading tests and describes six different profiles of struggling students as
follows: 1) Automatic word callers, 2) Struggling word callers, 3) Word stumbles, 4) Slow comprehenders, 5) Slow word callers, and 6) Disabled readers. *(brief description of each of these profiles was also included)*

The article was reasonably well presented, except for the descriptions of instruments used that are not well known and any discussion of their psychometric properties, plus the lack of attention to any serious analysis leading to their conclusions. I thought the article should have been revised for clarity, comprehensiveness, and accuracy before going into print. This research article will help me find instructional strategies that I might use.


This study looks at how signing skills, gender and therapy type influence a deaf client's perception of the counseling process. The results showed that these three factors did not have an influence on perception.

There were some limitations that would influence the outcome of this research. First, the sample for the research was very small. Also, the sample of students in the study were all taking professional perception classes which may not be a true representative of the deaf population. Finally, sign skills were not indicated as a factor of the clients' perception. This may be due to the fact that one quarter of the sample was hard of hearing, not deaf. The client's who were hard of hearing may be more tolerant of signers who are not as skilled. There were some flaws in the sample and the stimuli, and I believe that if future research were done to change these inconsistencies, the results would be very different.

**MISCELLANEOUS INFORMATION**
**PARTICIPATION:**
You are expected to visit the course website on a regular basis during the course, navigating your way through the units as you view, read, and interact with course materials and other students in the class. I expect that you will be “in class” regularly and making valuable contributions to your group’s discussions. It is quite likely that you will spend considerably more time than in a traditional on-campus class, especially at the beginning, as you become familiar with the style of presentation and the format of the course.

**DOWNLOADING FILES FROM COURSE DOCUMENTS:**
To download the files from Course Documents, you must have Adobe Acrobat Reader installed on your computer. If you need the software, Go to Adobe's website: [http://www.adobe.com/](http://www.adobe.com/) and find the Acrobat Reader (free) for your computer system. Download it and install it; then you will be able to open the files.

**USING EXCEL:**
In Units 3 and 4 (Chapters 6 and 7), I ask that you use Microsoft Excel, part of the Microsoft Office Suite, for calculating statistics. Of the spreadsheets that are generally available to most of us, Excel has the most statistics of any of the others. If you don't
have Excel, maybe you can find a lab or somewhere else you can go to do the work for these two units (chapters).

If you are a novice at using Excel, there are lots of resources you can use. You could purchase a book such as "Excel 2010 Bible" ($17 new) or "Excel 2010 for Dummies" ($12.43). These two books and others can be found at Amazon.com. Used copies are sometimes available too. Instead of purchasing a book, there are websites that offer free tutorials. One site that I recommend is: http://www.fgcu.edu/support/office2007/excel/basics.html (Florida Gulf Coast University’s Excel Basics). This site is written for Excel 2007. However, instructions are very similar for most fairly current versions and for both Macs and PCs. It is also similar to Excel 2003.

In addition, Excel has built in help for you: you can read the Excel section in the "Getting Started Book.pdf" that is part of Microsoft Office and you can look in the Help Menu of Excel itself. So if you don't have spreadsheet experience or you don't use Excel often, it will be to your advantage to learn the basics before we get to Units 3 and 4 so that you can make the best use of Excel for statistics. Note also there are handouts in the Course Documents section of this course that walk you through the Excel operations that we will be doing (there are multiple versions for whatever year of the software you may have).

**ADVICE YOU DIDN'T ASK FOR:**

This section contains a compilation of matters, concerns, questions, and tips that came up during prior offerings of this online course.

1. Read everything! Particularly the syllabus and the course schedule! *Then halfway through the course, read them again.* About 40 percent of all the emails I get from Blackboard classes ask questions that are addressed in the Schedule or the Syllabus unless I include this sentence here.

2. ☺ then it reduces to about 15 percent.

3. Check your Bearmail regularly. As the course progresses, I will use more email and fewer announcements to communicate with the class. And, of course, unit moderators will be emailing you weekly.

4. This can be a very challenging course, especially for those who have no background in research methods, measurement, statistics, and/or online technology. Resolve technology problems quickly and don’t get behind the rest of the group as we cover the content.

5. **UNITS 3 & 4** (dealing with statistics) are our most challenging units. They are each scheduled over a week and a half to give you a little extra time to be sure the work is completed. Often students rise to the occasion and handle Units 3 and 4 alright - then they relax and Units 5 and 6 don’t go as well as they should. Unit 7 is a bit of a challenge as well, so extra time is also devoted to it.

6. We actually begin the course content a few days after the semester begins. It takes us a little time to make sure that all email addresses are correct and that everyone is actually getting into the course and getting the technology to work. Further, we often have 10 to 15% of folks drop once they see how the course will go - new folks then
often add late. If you decide to drop or if you add the course after it starts, please email me about your dropping or adding - thanks.

6. Please include your first and last name in ALL of your email messages (I can’t always tell who is writing by the email addresses that some people have these days). And to you folks who have acquired a new last name or who go by a shortened first name - please identify yourself in emails with the names that the course has for you. (Better yet, if you have made a name change, call the registrar, find out what you need to bring with you, and go make the name change – I understand that it goes pretty fast and you’ll be getting your transcripts with the name you want.)

7. About 35% of students who complete this course comment that they would have likely done better with a live classroom version of the course. I recommend that you carefully look through this course during the first week to be sure that you know what you are getting into.

CONTACTING THE INSTRUCTOR
Contact me at any time during the course via email if you have questions here is my snail mail too:

Brittany Lane PhD
Applied Statistics & Research Methods
College of Education
University of Northern Colorado
Campus Box 124
Greeley, CO 80639

Email: brittany.lane@unco.edu

Accommodations Statement
Students who believe that they may need accommodations in this class are encouraged to contact the Disability Support Services, Voice/TTY (970) 351-2289, or fax (970) 351-4166, or visit www.unco.edu/dss as soon as possible to ensure that accommodations are implemented in a timely fashion.

Inclusivity Statement
The College of Education and Behavioral Sciences (CEBS) supports an inclusive learning environment where diversity and individual differences are understood, respected, appreciated, and recognized as a source of strength. We expect that students, faculty, administrators and staff within CEBS will respect differences and demonstrate diligence in understanding how other peoples' perspectives, behaviors, and worldviews may be different from their own.