EDFI 751: ADVANCED QUANTITATIVE METHODS
in EDUCATION I
SYLLABUS
Fall 2007

Instructor: Mark A. Earley, Ph.D.  Phone: 419/372-0247
Office: 554 Education Building  Fax: 419/372-8265
E-mail: earleym@bgsu.edu

Class meetings: Wednesdays, 12:30 – 3:20, 203 Education Building
Office Hours: Mondays and Wednesdays, 4:00 – 5:30, or by appointment

Please make sure to use the subject line EDFI 751 each time you e-mail me regarding class.
I have set my e-mail program to file these in a separate folder so I do not lose them in the mess of
spam I receive each day. Those without this subject line may be accidentally deleted.

Required Texts
qualitative research (3rd ed.). Upper Saddle River, NJ: Merrill-Prentice Hall.
Angeles, CA: Pyrczak.

Course materials available via Blackboard and MyBGSU

Recommended Texts

Special Needs
Anyone in need of special arrangements or assistance during or outside of class should contact me
as soon as possible. You should also be in contact with the Office of Disability Services at BGSU:
413 South Hall, DSS@bgsu.edu, 419/372-8495, TTY 419/372-9455,
http://www.bgsu.edu/offices/sa/disability/

EDFI Course Expectations
You should go to the EDFI homepage and look at the general expectations all EDFI faculty share
for our courses: http://www.bgsu.edu/colleges/edhd/edfi/expectations.htm

Academic Honesty
Please note I support and require my students to uphold the University’s Academic Honesty policy
as set forth in the student handbook. Any student violating this policy will receive a course grade of
“F” and be subject to any and all appropriate university sanctions. If you are unsure whether or not
you are about to do something that violates this policy, ASK ME!

BGSU Core Values:
  Respect for One Another ♦ Creative Imaginings ♦ Intellectual & Spiritual Growth ♦
  Cooperation ♦ Pride in a Job Well Done
LEARNING OUTCOMES

As an introductory methods course, it is not possible to cover every corner of the quantitative research world. Still, there are some basic learning outcomes around which I have developed this course. None of these are “one shot” outcomes – they each thread throughout the course.

You can see connections between in-class activities, assessments, readings, and discussions through the learning outcomes below. If at any point you are wondering why we are doing something, review this list and you should find your answer. If you don’t, ask me – sometimes various aspects of the course may need to be re-designed on the spot.

When I think of students who have taken this course compared to students who have not, I hope my students are able to:

(1) Understand the phases of a research study and how they interact,

(2) Describe the most common quantitative research designs,

(3) Distinguish among the most common quantitative research designs,

(4) Critically read published research for strengths and weaknesses,

(5) Design a well-developed, small-scale quantitative research study,

(6) Find and comprehend methods resources external to those provided in class,

(7) Draw connections between research and practice,

(8) Locate themselves within larger research communities,

(9) Understand the importance of ethically conducting research and representing research participants in reports,

(10) Develop a passion for their chosen research interests, and

(11) Become reflective social science researchers.

BGSU Core Values

Respect for One Another • Creative Imaginings • Intellectual & Spiritual Growth •
Cooperation • Pride in a Job Well Done
COURSE ASSESSMENT

(1) **Concept Discussions (400 points).** To review specific concepts learned from both the consumer and producer perspectives, there are 10 concept discussions for you to complete. I will post these on Blackboard following the course discussions to which they relate. My preference is typed responses, but I will accept handwritten work if it appears professional.

(2) **Literature Review (150 points).** This semester we will spend time focused on developing a literature review for a topic of your choice. These literature reviews will be the foundation for completing a research proposal next semester. Guidelines and a scoring rubric are posted on Blackboard.

(3) **Research Journal (100 points).** Your research journal as a reflection tool is a key part of the research and learning process. This is where you record thoughts, questions, ideas, and those elusive “perfect sentences” we all come up with once in a while.

(4) **Final Activities (150 points).** On the last day of class we will review the semester and work on evaluating whether we met your individual goals. There will be a series of activities designed to help you with this reflective process.

(5) **Human Subjects Training (40 points):** For this I need a copy of the certificate you print at the end of the training (after passing the exam). **You need to complete this by 21 November 2007** (prior to Thanksgiving Break). Access online training via http://www.bgsu.edu/offices/orc/hsrb/hs_training_schedule.html (link available on Blackboard) or view the schedule for live training.

(6) **Participation Credit (60 points).** You are expected to come to class each week, be prepared to discuss any reading material assigned, and help create a positive learning environment for us all.

Late Assignments:

Although things happen, there are multiple options for handing in assignments and I expect them the day they are due. You can hand them in in person, via e-mail, or by fax. **Any assignments turned in late receive a 5% deduction from your score for each class meeting they are late.** Exceptions will be handled on a case-by-case basis, and you must contact me as soon as you know a challenge may arise. **NOTE that simply telling me you will not be in class does NOT excuse late assignments!**

Grading Scale:

\[
\begin{align*}
A &= 93-100\% \quad (832 - 900 \text{ points}) \\
B &= 86-92\% \quad (769 - 831 \text{ points}) \\
C &= 80-85\% \quad (715 - 768 \text{ points}) \\
F &= \text{up to 79\%} \quad (\text{up to 714 points})
\end{align*}
\]

---

*BGSU Core Values*

Respect for One Another • Creative Imaginations • Intellectual & Spiritual Growth • Cooperation • Pride in a Job Well Done
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic(s)</th>
<th>Reading(s)</th>
<th>Assignment(s) Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 August</td>
<td>DR. E IN PORTUGAL – NO CLASS MEETING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29 August</td>
<td>Introduction</td>
<td>Creswell, Chs. 1 &amp; 2 Article #1</td>
<td>---</td>
</tr>
<tr>
<td>05 September</td>
<td>Topics, Purposes, and “Into the Woods”</td>
<td>Creswell, Ch. 3 Handout</td>
<td>Brainstorm study topics</td>
</tr>
<tr>
<td>12 September</td>
<td>Literature Reviews &amp; Conceptual Frameworks</td>
<td>Creswell, Ch. 4</td>
<td>Find 5 articles on your topic</td>
</tr>
<tr>
<td>19 September</td>
<td>Sampling Designs</td>
<td>Creswell, pp. 150 – 159</td>
<td>CD #1</td>
</tr>
<tr>
<td>26 September</td>
<td>Data Sources &amp; Procedures</td>
<td>Creswell, pp. 160 – 179</td>
<td>CD #2</td>
</tr>
<tr>
<td>03 October</td>
<td>Research Questions &amp; Variables</td>
<td>Creswell, Ch. 5</td>
<td>CD #3 Lit review outline</td>
</tr>
<tr>
<td>10 October</td>
<td>Survey Research</td>
<td>Creswell, Ch. 13 Article #2</td>
<td>CD #4</td>
</tr>
<tr>
<td>17 October</td>
<td>Descriptive Statistics</td>
<td>Creswell, Ch. 7</td>
<td>CD #5 Draft of lit review section</td>
</tr>
<tr>
<td>24 October</td>
<td>DR. E IN ST. LOUIS – NO CLASS MEETING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31 October</td>
<td>Correlational/Predictive Research</td>
<td>Creswell, Ch. 12 Article #3</td>
<td>CD #6</td>
</tr>
<tr>
<td>07 November</td>
<td>Experimental Research</td>
<td>Creswell, Ch. 11 Articles #4 &amp; 5</td>
<td>CD #7</td>
</tr>
<tr>
<td>14 November</td>
<td>Hypothesis Testing</td>
<td>Creswell Ch. 7</td>
<td>CD #8 Draft of full lit review HSRB Training deadline</td>
</tr>
<tr>
<td>21 November</td>
<td>THANKSGIVING HOLIDAY – NO CLASS MEETING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 November</td>
<td>Validity</td>
<td>Handouts</td>
<td>CD #9</td>
</tr>
</tbody>
</table>

*BGSU Core Values*

Respect for One Another • Creative Imaginings • Intellectual & Spiritual Growth • Cooperation • Pride in a Job Well Done
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic(s)</th>
<th>Reading(s)</th>
<th>Assignment(s) Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>05 December</td>
<td>Back to the Beginning</td>
<td></td>
<td>CD #10&lt;br&gt;Final literature review</td>
</tr>
<tr>
<td>12 December</td>
<td></td>
<td></td>
<td>FINAL REFLECTIONS</td>
</tr>
</tbody>
</table>

**ASSIGNMENT ORGANIZER**

**Wednesday, 22 August 2007**

*DR. E in PORTUGAL – NO CLASS MEETING*

**Wednesday, 29 August 2007: Introduction to Educational Research**
Today is a day of introductions. We'll meet each other and engage in an opening reflective activity and discussion about research. After the break, we'll discuss the article you read for today and the general process for conducting research.

For next class:
- Read Creswell Ch. 3 and handout on Research Purposes
- Brainstorm list of topics you are interested in researching (informal, but typed)
- Opening journal entry: What are my personal learning goals for this semester?

**Wednesday, 05 September 2007: Topics, Purposes, and “Into the Woods”**
Today our journey “Into the Woods” begins with a discussion of purposes for research as presented by others. We will also discuss the topics you have brainstormed and how these might look with the various purposes we discuss. There will be some peer discussion of your topics to close class today.

For next class:
- Read Creswell Ch. 4
- Find 5 articles related to your topic, print them, and bring them to class next week
- Second journal entry: Why will I do research?

**Wednesday, 12 September 2007: Literature Reviews & Conceptual Frameworks**
Setting up the background, learning more about the topic, and organizing your thoughts about the topic are all difficult and time-consuming tasks. Today we explore why a conceptual framework is so necessary, how to get started building yours, and some tips for conducting and organizing the literature review process.

For next class:

---

**BGSU Core Values**

Respect for One Another • Creative Imaginings • Intellectual & Spiritual Growth • Cooperation • Pride in a Job Well Done
Wednesday, 19 September 2007: Sampling Designs
Today we discuss various procedures for selecting random samples and how these samples impact our ability to make statistical generalizations.

For next class:
☐ Read Creswell pp. 150 – 159
☐ Complete Concept Discussion #1
☐ Third journal entry: My Research Community

Wednesday, 19 September 2007: Sampling Designs
Today we discuss various procedures for selecting random samples and how these samples impact our ability to make statistical generalizations.

For next class:
☐ Read Creswell pp. 160 – 179
☐ Complete Concept Discussion #2
☐ Fourth journal entry: Questions I have about research in my topic area

Wednesday, 26 September 2007: Data Sources & Procedures
Once a sample has been selected, we collect data. Today’s topic focuses on ways to collect numeric data and ways to evaluate the quality of that data.

For next class:
☐ Read Creswell Chapter 5
☐ Complete Concept Discussion #3
☐ Outline of major sections of literature review submitted electronically BEFORE class
☐ Fifth journal entry: How is the literature review process going for me?

Wednesday, 03 October 2007: Research Questions & Variables
With foundational material now in our tool belts, we will return to exploring research purposes by discussing how to write research questions and hypotheses. An important part of this process is specifying the variables you will study and how you will study them. Today will serve as an interim “wrap up” of what we have covered so far.

For next class:
☐ Read Creswell Ch. 13
☐ Read Article #2 (Forde, Dill, Forde, & Hare, 2002) and be prepared to discuss in class
☐ Complete Concept Discussion #4
☐ Sixth journal entry: What am I comfortable with in research design, and what do I still need to work on?

Wednesday, 10 October 2007: Survey Research Designs
Today we move out of foundational design discussions to focus on our first type of quantitative research designs: survey research. We will discuss “how things should look” via the textbook chapter and “how things do look” via a published survey research study.

For next class:
☐ Read Creswell Ch. 7
☐ Complete Concept Discussion #5
☐ Draft of one section of literature review to hand in

BGSU Core Values
Respect for One Another • Creative Imagining • Intellectual & Spiritual Growth • Cooperation • Pride in a Job Well Done
Wednesday, 17 October 2007: Descriptive Statistics with SPSS
Today we will review concepts from introductory statistics that help us summarize and describe numeric data. We will work with SPSS in class to explore descriptive statistics.

For next class:
- Read Creswell Ch. 12
- Read Article #3 (Gasser, Larson, & Borgen, 2004) and be prepared to discuss in class
- Complete Concept Discussion #6

Wednesday, 24 October 2007

DR. E in ST. LOUIS – NO CLASS MEETING

Wednesday, 31 October 2007: Correlational/Predictive Research Designs
Today we continue discussing specific research designs with a focus on correlational and predictive research. We will again discuss “how things should look” via the textbook chapter and “how things do look” via a published survey research study.

For next class:
- Read Creswell Ch. 11
- Read Articles #4 and #5 (Rovai & Jordan, 2004 and Sanchez & Medkik, 2004) and be prepared to discuss in class
- Complete Concept Discussion #7

Wednesday, 07 November 2007: Experimental Research Designs
Considered in some circles to be the “gold standard” of research, our discussion of types of quantitative designs concludes today with experimental research and its various designs. We will again discuss “how things should look” via the textbook chapter and “how things do look” via a published survey research study.

For next class:
- Re-read Creswell Ch. 7
- Complete Concept Discussion #8
- Finish draft of full literature review to hand in for comment (optional)

Wednesday, 14 November 2007: Hypothesis Testing with SPSS
Today we will return to SPSS to discuss hypothesis testing and regression as ways to analyze numeric data from predictive and experimental research studies.

For next class:
- Read handout on Validity in Research
- Complete Concept Discussion #9

Wednesday, 21 November 2007

THANKSGIVING HOLIDAY – NO CLASS MEETING

BGSU Core Values
Respect for One Another • Creative Imaginings • Intellectual & Spiritual Growth • Cooperation • Pride in a Job Well Done
Wednesday, 28 November 2007: *Validity in Research*
Implied in most of our earlier discussions is the concept of *validity* in research – how do I know I got it right? (Maxwell, 2005). Today we will look at various ways our study might break down, how we can anticipate these during the design process, and what to do when they happen unexpectedly.

*For next class:*
- Complete Concept Discussion #10
- Complete literature review to hand in next week

Wednesday, 05 December 2007: *Back to the Beginning*
With the major topics covered, we’re “through the woods” so to speak. We will spend today going back to the beginning to put all the various pieces back together, talk about plans for proposals in spring, and preview the final activities for next week.

*For next class:*
- Read Article #6 (TBA) for final activities next week
- Concept Discussion #10 completed

Wednesday, 12 December 2007: *Final Activities*
Today we will meet from 12:30 – 2:30 and complete a series of in-class final activities meant to review what we’ve learned this semester. There will be an article to read for these, but otherwise I do not expect you’ll “study all day and night”. The activities are open-book, open-note, and you will work in pairs. The best preparation for this day is to organize your course notes and assessments so that you know where everything is.

*Welcome to Quantitative Research in Education! My hope is for all of us to have a dynamic learning experience this semester!* ~ Dr. E
Learning with Dr. E: Ways to Make it Meaningful

Over the years I have had some wonderful classroom experiences, and some rather disappointing ones – I’m sure you can say the same. What I have pieced together below are some expectations I have of you, and expectations I have of myself, that I believe will increase the chances we all have a great term. Please contact me if you have concerns or questions about any of these or if you believe there should be some added to this list. I do not consider it to be exhaustive.

My expectations of students:

• Remember first and foremost that our classroom is a learning community in which everyone’s perspective is welcome and respected. Disagreement is allowed, and constructive criticism is encouraged, but rudeness and unsupported arguments are not.

• As a graduate-level course, I expect students make every effort to complete the assigned readings in a thoughtful and timely way. I recognize this class is not the only “thing” you have going on in your life right now, but you have committed to this course by registering for it at this time. I assume that means you have considered your other commitments and are able to balance all aspects of your life together with this course. If you do not feel you have the time to commit, you should not be in this course. Typical expectations of graduate students are two hours of work outside of class for each hour in class – for a class that meets for 3 hours, I expect an additional 6 hours outside of class and develop course activities and assessments to fill that 6 hours (note in the summer, with two three-hour class meetings each week, I expect 12 hours of work a week outside of class).

• I hope students treat each assessment not as a threatening, stressful activity but rather as an opportunity to pull together your knowledge and demonstrate to yourself and to me what you do and do not understand. I do not consider assessments to be the “ends” of learning, but rather the “means” of learning, and I hope you believe the same.

• I also hope students put a little bit of “themselves” into each assessment. Some assessments are more rigid in their structure, but I try to develop the majority of my course assessments to allow students to apply their own individual learning styles and strengths to the final product. I still expect students to complete assessments in a thoughtful, professional, and appropriate way.

• I expect, at a minimum, that you have PROOFREAD any writing assessments prior to turning them in. I will not edit your papers for grammar, punctuation, or spelling errors; instead, I return them for a re-write with points lost for late submission. Please make use of the BGSU Writing Lab if you feel your writing skills need improvement.

• I expect you to come to each scheduled class meeting with the assigned reading done and the assigned writing assessments ready to hand in. I do not, however, take attendance. It is your responsibility to collect any notes and/or handouts from a peer should you need to miss class. I do not re-teach material you choose to miss. I understand that life events and work commitments are sometimes unavoidable, and I do not think any less of students who have other priorities. You do not need to let me know in advance that you will be missing a particular class meeting, but a quick note relieves my worry about whether you are okay 😊

• I expect students to be flexible and adapt to changes in the course syllabus. I do not make these changes “on the fly,” but only after I have determined the changes will make your learning experience more meaningful.

BGSU Core Values

Respect for One Another • Creative Imaginings • Intellectual & Spiritual Growth • Cooperation • Pride in a Job Well Done
• I expect students to recognize that I too have life events and work commitments outside of this course, and there may be times when scoring and response to e-mails and phone calls is delayed.

• I expect students to reflect on their own learning, including the content of that learning as well as the process of that learning, so they leave my course better “learners” as well as more knowledgeable about course content.

• Although there is a clear expectation that graduate students produce “A” or “B” level work, you should NOT consider a “B” to be a failing grade. This is still representative of “Above Average” work and common in graduate study. Any grade you earn is not a reflection on you as a person, and I hope by this point you have learned not to define yourself by your grades.

My expectations of myself (and expectations you can therefore have of me):

• I will make every effort to ensure a positive classroom environment that encourages everyone to contribute and learn, both from me and from other students. I do not ignore or minimize any student at any time, nor do I allow other students to do so.

• I come to each class session organized and prepared to guide students through that day’s topic(s) in a clear and effective manner. I do not waste students’ time in class or outside of class through “busy work”.

• I provide clear guidelines and expectations for each assessment so you have an understanding of what differentiates “Excellent,” “Above Average,” and “Average” work on that assessment. I also encourage alternative forms of expression where possible.

• I make every effort to score assessments and return them by the next class meeting. This is a bit more challenging in the summer and during “peak” periods each semester in which I may take an additional class period to return comments. My comments will be thoughtful and constructive so that you understand how your work might improve.

• I reflect after each class session and fine tune the overall class structure and/or individual class meeting plans to fit the needs of each particular classroom environment. While fine tuning, I try not to completely overhaul a course syllabus in the middle of the term because I realize this leads to some confusion for everyone. Any changes, large or small, are made in the best interests of the student and communicated as far in advance as possible.

• I make every effort to return e-mails and phone calls from students within 48 hours of receiving them. I am present for my posted office hours and available to guide students outside of class time as much as I can be.

---

BGSU Core Values

Respect for One Another • Creative Imaginings • Intellectual & Spiritual Growth •

Cooperation • Pride in a Job Well Done