

Strategies for Educational Inquiry

**Y520 - Section 5982
Fall Semester 2002
Tuesdays 1:00 - 3:45 pm
Wright 1006**

“A sense of humor is the oil of life’s engine.”
— *Anonymous*

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Required Text: Gay, Lorriane. R., & Airasian, Peter (2003). *Educational Research: Competencies for Analysis and Application*. Prentice Hall.¹

Additional Readings: Assigned for each session. See class web page. Some readings will be marked as “required.” Others will be marked as “suggested.”

Course Description

The course catalogue description for Y520: “Introductory course intended to orient beginning graduate students to the conduct of social science inquiry in general and educational inquiry in particular and to acquaint them with key terms and generally accepted procedures in qualitative and quantitative inquiry.”

Throughout your career you will encounter empirical research reports that claim to describe a true state of affairs about some aspect of reality. The report may (a) describe a phenomenon of interest to educators, or (b) identify causal relationships between certain outcomes of interest and antecedent conditions and/or characteristics. In Y520 students learn to analyze and evaluate the adequacy of these descriptive studies and claims of causation by focusing on the theory and specific methods of empirical social science research used to conduct inquiry about education related topics.

No pre-requisites are listed for this course. However, some statistical and quantitative analytical techniques are, of necessity, used. Students should be able to perform basic mathematical operations. See the math refresher in the textbook appendix. Completion of an undergraduate course in statistics is helpful, but not required.

The primary goals are to:

1. Learn to discriminate between good research and other (presumably, not-so-good) research.
2. Improve your ability to read, understand, interpret, evaluate and use empirical research.

1. You should recognize that this reference does not conform to APA standards for citing references. In what way(s) is it incorrect?

3. Become familiar with the ideas and concepts underlying empirical, analytical investigation.
4. Appreciate the role of judgment when drawing inferences from data and analysis.
5. Gain experience as a member of a research team that collects data, first hand.

Secondary goals:

1. Become familiar with the major research designs and control techniques and how to apply them.
2. Learn how to discriminate among and interpret commonly used statistical tests, and to select the appropriate statistical tests for a given research problem.
3. Become familiar with the major theoretical and philosophical approaches to research in education.
4. Improve your analytical and writing skills.

Course Organization

This is a traditional, face-to-face, classroom-based course that includes lectures, classroom discussions, occasional guest lecturers, assigned readings, homework, tests, and group interactions.

- Required Readings. Most topics have one or more required readings, either a textbook chapter or journal article(s). By the end of the course you will have read most chapters of the text. Other required and suggested readings will be added to the web page as we progress throughout the semester. Instructor written questions are provided for some of the required readings.
- Suggested Readings. Sometimes required readings appear (a) impenetrable, (b) too simplistic, or (c) fluff. Some of the required reading may provoke one of these reactions from you and if so, turn to the suggested readings for similar materials by different authors.
- Critiques. Students will critique two empirical research articles. This provides opportunity for students to demonstrate their mastery of analytical and/or writing skills.
- Homework. Rather than handing out homework problems in class, students will access the problems via the web. The number of homework assignments varies each semester, and this semester, will be limited primarily to statistical problems.

Course Requirements and Grading

Grades will be determined by performance on

- critiques of two empirical research articles (10 pts each),
- homework assignments (10 pts total),
- group research project (40 pts total)², and
- final multiple choice, true/false, short answer, matching test (30 pts).

Letter grades will be assigned as follows:³

- A = 100 — 90
- B = 89 — 80
- C = 79 — 70
- D = 69 — 60
- F <= 59

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2. Introduction & Literature Review (5 pts), Statement of Problem & Research Question (5 pts), Methods Section (15 pts), Data Analysis & Findings (10 pts), Conclusion (5 pts).
 3. See *Indiana University, School of Education Graduate Program, Bulletin 2001-2003*, pages 16-17 for interpretation of grades and additional details concerning grades.

Students are responsible for their individual preparation and participation. Students are expected to read articles prior to the class period for which the pages are listed and be prepared to discuss.

Preparation consists of reading the assigned material (and note-taking) and completing assignments prior to the class period for which they are listed. (The first week of class is the only exception). Participation is defined as contributing relevant comments to group and class discussions (i.e., answering questions posed either by other students or the instructor — and withholding irrelevant comments), working on individual and group assignments, engaging in constructive criticism, assisting other class members, and demonstrating solutions to problems.

Critiques may be formal, written products that demonstrate a thorough understanding of an assigned research report — and its limitations. Other critiques require you to complete an “article critique form,” which, in effect, encourages a similar degree of analysis.

Homework exercises are opportunities for you to demonstrate your understanding of certain concepts and mastery of data analytic techniques.

The group research project requires a group of individuals to collaborate on the development of a research report. The following steps indicate the scope of the project:

- Submit topic and hypothesis for instructor approval before undertaking subsequent steps.
- Conduct library research (literature review). Summarize and synthesize articles, pointing out the logical connections to your research topic.
- Collect data —first hand data collection. Members of the group might observe, for example, the incidence of “attention-seeking” behavior in a kindergarten classroom and teacher/other student responses; or develop a questionnaire to measure attitudes towards school choice; or observe the activities in a campus student services unit; or conduct a content analysis of documents; or develop a unique method of measuring a phenomenon related to education. This short list is not exhaustive.
- Analyze data. Analysis of the data your group collects is essential. We will look for the appropriateness of the techniques chosen.
- Summarize results. What did you find? Does it confirm or fail to confirm your hypothesis?
- Formulate conclusions. This is the “so what?” portion. What is the significance of your findings? What do your results suggest? You should also indicate an awareness of the limitations of your study —and be aware that every study has limitations.

Initially each group member receives the same grade as all other members of the group. Each member of the group rates, anonymously, the contribution of each of the other group members. Hence, it is in each individual’s best interest to participate fully and encourage other group members to do likewise, because an individual’s final grade on the project can be reduced in the (unlikely) event their contribution is less than that of other group members. Instructors may also render a judgment about the participation level of group members. The content of the report will be graded according to the guidelines in “Grading of written assignments.”

Members of each group will present their results to the class on December 10. Class members will offer comments on the content and presentation of the project.

Grading of written assignments

The grade is based on organization and completeness of the document; quality and originality of ideas; use of proper grammar, spelling, and syntax; ability to choose the relevant concepts or techniques and apply them correctly; and proper citation of the literature.

Written assignments should be in courier 11 or 12 points, double spaced, and follow the conventional rules of grammar, punctuation, spelling, and notation of references. Use the *Publication Manual of the American Psychological Association* as your style guide. Be sure to use the margins and type size as specified. Always keep a copy of your written assignments for yourself. Assignments turned in late will

lose points. For critiques, you will lose 2 points for each day late. Group projects will lose 5 points for each day they are late.

Please note that all University policies regarding cheating and plagiarism will be strictly followed.⁴ Cheating and plagiarism are subject to grade lowering and/or other sanctions. This also applies to the preparation of research papers and projects. You may not submit simultaneously a research or term paper for credit in more than one class. Additionally, all papers must be your own (or your group's) original work. You may not use reproductions, work completed by someone else, or purchased work.

Table 1. Schedule (Note: Minor changes in topics and pages may occur throughout the semester)

	Date	Topics	Readings
1	Sep 3	Introduction to educational research: Sources of knowledge. What is inquiry? What is empirical research? Scientific method. Research content and quality. Selecting a research topic. Literature search techniques	G & A 3-22 G & A 39-70 Additional readings on web site
2	Sep 10	Developing a research plan: Writing a hypothesis. Theory, variables, hypotheses. Ethics in research. Sampling	G & A 77 - 97 G & A 101 - 118 Additional readings on web site
3	Sep 17	Measurement. Measuring variables. Reliability & validity. Correlation (Critique 1 due)	G & A 123 - 153
4	Sep 24	Designs for description (Pre-experimental & qualitative approaches). Content analysis	G & A 163 - 221 Additional readings on web site
5	Oct 1	Qualitative data analysis & action research	G & A 227 - 256
6	Oct 8	Designs for description (Survey & correlational) (Critique 2 due)	G & A 277 - 323
7	Oct 15	Causal-comparative designs	G & A 337 - 343
8	Oct 22	Intro to experimental & single subject designs.	
9	Oct 29	Experimental & single subject designs	G & A 355 - 408
10	Nov 5	Statistics: Descriptive	G & A 409 - 439
11	Nov 12	(Homework 1 due) Descriptive statistics continues	
12	Nov 19	Statistics: Inferential (Group project due)	G & A 445 - 483 G & A 491 - 498
13	Nov 26	(course evaluation) (Homework 2 due) Inferential statistics continues	
14	Dec 3	Evaluating a research report	G & A 507 - 515
15	Dec 10	Presentation of Group Research Projects	
16	Dec 17	Final Exam	

Additional instructions for the group project and due dates for components of the project are forthcoming.

4. The University policy is located at http://campuslife.indiana.edu/Code/Part_3all.html. See Part 3: Section A: Academic Misconduct.