Data and Interpretation in Educational Inquiry
ED 501, Spring 2002, Tuesdays 5-8 pm

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NOTE
The content of this course has now been published in the following textbook.

Purpose
This course is intended to address the question of what constitutes "good data" from a variety of methodological points of view. Students will consider issues of reliability (accuracy, dependability, consistency) and validity (generalizability) from the perspectives of psychometric, developmental, and ethnographic researchers. Students will be expected to compare and contrast various measurement tools used in educational research and to label those tools that will be useful in their own research.

Readings
Students will be required to read from a packet of copied materials that will be distributed in class. We will negotiate a process for making copies, but each student will receive copies of all non-textbook readings.

Sometimes new jargon is invented for essentially the same measurement tools. Discovering authors' research questions and purposes can offer another level of insight into when and how to use particular measurement tools. Therefore, students will be encouraged to conduct a review of research in their fields to identify the range of tools that are commonly used to measure essential ideas.

Each student will be encouraged to label their own background deficiencies. Textbooks listed have been found useful by students in previous semesters. Students may also find other books useful (e.g., check with amazon.com, alibris.com, seminarybooks.com or other webs that have college texts). Some weeks, we will be relying on information from these books, but I would encourage any students who have not previously done research courses to read them thoroughly. For individuals who have done research prior to entering this course, these books might seem more like review material.

Assignments
Everyone is required to have completed the assigned readings before coming to class and be prepared to discuss the implications of those readings. Although there will be several weeks in which lecture is essential, we will not spend our time simply outlining the ideas presented. Students are encouraged to ask questions about anything in the readings that they do not understand. Although I do not take attendance, students’ valuable ideas are missed when they are not there, and attendance tends to be highly correlated with grades.

Grades will be based on two writing assignments and a final project. The first and second writing assignments will guide students through the process of posing a research question and thinking about what constitutes acceptable research evidence. Then, for the final, students will choose one of the approaches and write a small grant proposal, outlining a study.

Everyone will be required to participate on a listserv designed for the course. The listserv offers another forum for asking questions and thinking out loud about issues related to measurement. The listserv also offers an opportunity to discuss "thought problems" when material does not come through clearly in class.

Class Structure
The course is divided into three sections emphasizing psychometric, developmental, and ethnographic approaches to measurement. Nevertheless, these methods are not discrete so there will be considerable overlap in our discussions.

We will begin with the psychometric approach. During this section it would be helpful, but not required, if students brought a calculator. Basic +, -, x, and division functions are essential, having additional statistical functions can prove helpful. These will be useful for some of the in-class activities designed to allow you to practice various measurement techniques.

Accessibility
UIC strives to ensure the accessibility of programs, classes, and services to students with disabilities. Reasonable accommodations can be arranged for students with various types of disabilities, such as documented learning disabilities, vision or hearing impairments, and emotional or physical disabilities. Students who need accommodations for this class should let the instructor know their needs and she will help them obtain assistance.
### Tentative Outline

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<th>Week</th>
<th>Topic</th>
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<td>1--Jan. 8th</td>
<td>Introduction</td>
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<td>2--Jan. 15th</td>
<td>What does measurement involve?</td>
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<td>3--Jan. 22nd</td>
<td>Describing educational data—ethical issues</td>
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<td>4--Jan. 29th</td>
<td>Selecting a form of measurement</td>
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<td>5--Feb. 5th</td>
<td>Reliability</td>
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<td>6--Feb. 12th</td>
<td>Item analysis</td>
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<td>7--Feb. 19th</td>
<td>Validity</td>
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<td>8--Feb. 26th</td>
<td>Construct validity</td>
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<td>9--Mar. 5th</td>
<td>The challenge of measuring change</td>
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<td>10--Mar. 12th</td>
<td>Common techniques for measuring change</td>
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<td>11--Mar. 19th</td>
<td>SPRING BREAK</td>
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<tr>
<td>12--Mar. 26th</td>
<td>Structured interviews &amp; standardization</td>
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<td>13--Apr. 2nd</td>
<td>NO CLASS (AERA conference)</td>
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<td>14--Apr. 9th</td>
<td>Ethnography: Realism in research</td>
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<td>15--Apr. 16th</td>
<td>Stability and accuracy</td>
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<td>16--Apr. 23rd</td>
<td>Generalizability</td>
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<td>Apr. 30th</td>
<td>FINAL PAPERS DUE</td>
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DATA AND INTERPRETATION IN EDUCATIONAL INQUIRY
(Suggested readings by topic)

What Does Measurement Involve?

**Week 1: Introduction**
Maxwell, W. (1965). The kingdom where straightforward, logical thinking was admired over every other kind. In W. Maxwell’s, *All the days and nights* (pp. 397-403). New York: Vintage International.

**Week 2: What does measurement involve?**

**Psychometric Approaches**

**Week 3: Describing Educational Data—Ethical Issues**

**Week 4: Selecting a Form of Measurement**
Week 5: Reliability

Week 6: Item Analysis
**Week 7: Validity**  


See also:


**Week 8: Construct Validity**  


**Developmental Research**

**Week 9: The Challenge of Measuring Change**  


Week 10: Calibration and Standardization
See also:

Week 11: Spring Break

Week 12: Generalizability

Week 13: AERA Conference (no class)
Ethnographic Research

Week 14: Ethnography: Realism in Research

Week 15: Dependability and Credibility

Week 16: Confirmability
More Controversies

**Biases in Measurement**