LDT 690 Methods of Inquiry

LDT 690 orients you to the research 'side' of educational technology—the issues, ideas, and constructs that underpin our discipline; the nature/types of studies we tend to conduct; and the ways in which we 'act' on the findings or results. Students plan and conduct studies of their own; interact with grads who routinely conduct research or manage/supervise others who do; and become adept at searching for information, assessing its quality, and synthesizing/summarizing it so that others can take full advantage of what they've learned. Like so many of our other courses, LDT 690 has performance technology spin.

LDT 690 is organized around four phases:

**Phase 1: Planning the study.** Here you'll concentrate on both traditional and eclectic research designs (and thus be able to distinguish empirical studies from those that are idea-focused), how studies are planned—and why good planning is so important, robust methods for locating "good" information that ensures key underlying constructs are thoroughly described (and thus understood), and the "rules" that guide researcher behavior (ethical conduct)—from beginning to end.

**Phase 2: Collecting data.** Here you'll focus on building (or adapting/adopting) tools/instruments for gathering the information you need. This is where you determine your information resources (and from whom you need approval to access them), whether or not sampling is appropriate (and the steps involved in selecting samples), technologies that can streamline data gathering without compromising reliability and validity, the most opportune time for data collection, and techniques to ensure people (or organizations) aren't put at risk.

**Phase 3: Analyzing and interpreting the data.** Here you'll focus on the quantitative and qualitative methods by which your data may be analyzed, how to triangulate information drawn from multiple sources or via varying methods, and what the results "mean." A research study is organized around questions to be answered or issues to be addressed; thus, your goal is to ensure that the data you've collected and the interpretations from your analyses "align" with your original investigative intent. You may also learn things that you hadn't anticipated---what some refer to as unintended results.

**Phase 4: Reporting.** Here you'll focus on ways to present your work to other researchers and the 'general public.' Your task is to develop a writing style that is both professional and conversational, aesthetically pleasing, and visually astute. Graphics, charts, tables, and figures are key to preparing a report that is both accurate and easy to digest.

LDT 690 is action-oriented. In the context of designing and executing your own study, you'll learn about and practice with an array of applications/online tools—for planning, data gathering, analyzing the data and interpreting it, and reporting results to key stakeholders—and the larger community. You'll emerge from this course ready not only to design, develop, and implement performance interventions—but also to determine their worth or merit ... and ways to improve them.

LDT 690 features performance outcomes that directly reflect the 10 areas of competence that underlie the LDTTEC Master's program; student demonstrate mastery via a comprehensive exam process fully detailed in each course we offer.
This page details each performance outcome and the competency(ies) with which it is most closely associated.

In LDT 690, you will be able to:

- locate, examine, and critically interpret the literature associated with particular educational/instructional issues. [This implies familiarity/comfort with viable search engines, the PAC at Love Library, professional associations, and other resources.] -- **Values (Data-based decision-making*); Skills (Cognitive*); Knowledge (Professional and career)**

- describe common problems (validity, reliability, ethical concerns) associated with conducting, interpreting, and reporting educational research. -- **Knowledge (Principles, theories and models*); Skills (Cognitive*); Values (Eclecticism)**

- distinguish between/among research designs--both traditional and eclectic--noting their strengths, weaknesses, and situational appropriateness. -- **Knowledge (Principles, theories and models*); Skills (Cognitive*); Skills (Technical*)**

- distinguish between/among common analytical tests--and the assumptions that underlie them. -- **Knowledge (Principles, theories and models*); Skills (Cognitive*); Values (Technical*)**

- demonstrate competence with software appropriate for quantitative analyses (Excel, SPSS, etc.)--including set-up, graphical and table displays, and interpretation of results. -- **Skills (Technical*); Skills (Cognitive*); Values (Data-based decision-making*)**

- conduct a brief research/evaluation study, where you ... [**Knowledge--Principles, theories and models*; Knowledge--Processes*; Values (Data-based decision-making*)**]
  - identify a valid research issue or question to explore (to include, if appropriate, an investigational hypothesis).
  - conduct a review of the literature that contextualizes/operationalizes the constructs associated with the questions or issue of interest.
  - determine an appropriate research design--one that's theoretically robust yet practical to implement.
  - determine appropriate sampling techniques (whether data are acquired from people or existing resources).
  - develop data collection methods (surveys, interviews/focus groups, observations, tests, action plans, etc.).
  - determine how best to collect data (and over what time-frame or period) in ways that are ethically sound.
  - determine appropriate methods/procedures by which to analyze and triangulate the data (whether quantitative, qualitative, or both), and infer meaning from the results.
  - report the findings (to different audiences), as well as their implications.

- conduct yourself in a manner that demonstrates understanding of research "standards" promoted by AERA and other profesional associations or groups. -- **Values (Eclecticism); Values (Pragmatism); Skills (Interpersonal*)**

- identify common problems associated with conducting educational research and strategies for resolving them. -- **Values (Eclecticism); Values (Commitment to life-long learning); Knowledge (Systems*)**
LDTTEC students Only: See how 690 works prepares you for the LDTTEC Masters/Comprehensive Reflection and Presentation

Attendance and Participation:

Attendance, promptness and participation are both expected and appreciated. Take full advantage of the opportunities this class affords--from meeting educational researchers and analysts in the field to examining how the "research" function unfolds in all sorts of organizations (K-12 schools, colleges and universities, the military, government, the corporate sector, etc.). The connections you'll make and the competencies you'll acquire in this course will positively affect your marketability--your readiness to take on interesting, challenging and well-compensated organizational (or consultative) roles.

Requirements/Assessment:

Your final grade is determined by your performance on class assignments and -- to a lesser (but still important) extent -- your class participation. I do, however, reserve the right to modify assignments as the class progresses. The following depicts the preliminary breakdown of work for the course and each assignment's contribution to your total grade:

<table>
<thead>
<tr>
<th>Category</th>
<th>Assigned</th>
<th>Reflective</th>
<th>Total</th>
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Major Project

You'll be conducting a research study that involves data collection, analysis, and reporting. The project allows you to walk through the entire research process: identifying a question or issue to investigate--and setting it in context; conducting a brief lit review (which informs how you'll proceed); designing instruments and collecting the data; and (finally) analyzing data and inferring meaning from your findings.

You'll connect theory and practice--and, in the process, see how inquiry makes us better performance technologists--able to a) elegantly solve an array of performance problems, b) exploit performance opportunities, and c) collaborate in innovative ways with colleagues and peers.

Your grade/score comprises feedback gleaned from our assessment and your own reflective input.
The research project is comprised of multiple parts/deliverables; altogether it's "worth" 60% of your grade.

**Research proposal & Lit review**  
In essence, you'll produce a structured white paper or technical report that generally conforms to APA guidelines.

**Instruments**  
These are the instruments that you will build (or "adapt/adopt") to collect your data.

**Report**  
The report allows you to present a coherent explanation of the data you collected, and your interpretation of the analysis.

**Overview of Assignments and Due Dates: (samples & templates, on Blackboard); Submit research project pieces to BB's Assignments**

**A Chart showing the structure of All Assignments**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Samples</th>
<th>Point Value</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sun, Feb 8 (Wk 3)</td>
<td>Final Project sign-up: Google Doc for SP'15</td>
<td>SP'14 projects, SP'12 projects</td>
<td></td>
<td></td>
</tr>
</tbody>
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**Friday, Feb 20 (Wk 5)**
Research/study Proposal (team)  
see BB  
100  
10%

**Friday, March 13 (Wk 8)**
Literature Review (to establish foundations for the study)--team of 2  
see BB  
100  
20%

**Before Monday April 6 (when data collection should start)**
Study Instruments (draft)-Team  
see BB  
80  
20%

Team Performance Reports (Sample)

**By May 6**
Draft Final Report--Team  
Email to instructor  
--  
no grade, optional submission

**By May 13 (earlier would be better!)**
Final Report (revised version)--by 6 pm!  
to BB  
100  
30%

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Analysis Exercises (Solo)  
20  
20%

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Total  
400  
100%

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Required Texts (for Spring 2015):

**Practical Research: Planning and Design (10th) Without the Access code for myEducation Lab**
Authors: Paul D. Leedy and Jeanne Ellis Ormrod

Authors: Neil Salkind
Publisher: Sage

Optional Texts:

**Handbook of Technical Writing (10th Edition)**
Authors: Gerald J. Alred, Charles T. Brusaw, & Walter E. Oliu
Publisher: Bedford/St. Martin's (2009) [Companion website](#)

**Educational Research: Quantitative, Qualitative, and Mixed Approaches**
Author: Christensen, Larry B.; Sage (2013). 600 pages.

All books can be purchased at Aztec Shops (including EZ Books and Ship-to-Home) or an online retailer (Amazon). Aztec shops will match low price you found elsewhere.

Tools & Resources:

Please see [This newly built Resources List](#)

Six "key" tools to which we as researchers always have access:

- The library and its resources
- Computers and software
- Measurement techniques
- Statistics (data analysis strategies)
- Our own minds
- Language

Our goal is to:

- Express ourselves articulately (orally)
- Write to communicate effectively with different audiences
- We cue people via transitions (words, phrases), headings/subheadings; we use specific devices to help people follow our train of thought
- We use topic or leading sentences/assertions to ensure we get to the point
- We use data to build or support our assertions or arguments
- We tell the whole story--not just the parts that make us look right or good; we're honest in the narration
- We are organized and logical--but also creative and interesting
- We set the context; we provide overviews or orientations where necessary
- We aim for as few technical errors as possible
- We use visuals to help explain complex or dense information
- We attribute ideas to those to whom they belong; we approach information honestly
- We revise/edit/rework; we accept writing as a process
- 📚 Support tools for your use/reference:
  - APA guide (6th edition)--link to the APA Store (sold on Amazon for <$15)
  - A Guide to Love Library for LDTTEC Students (LDT 795A/F09: Brown, Ellis, Nelson)
- 💻 Powerful Survey tool: Qualtrics (individual Log-in)