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# EDLD 519.01: Measurement and Analysis of Educational Data

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*University of Montana, Missoula*

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**THE UNIVERSITY OF MONTANA**  
**COLLEGE OF EDUCATION AND HUMAN SCIENCES**

DEPARTMENT OF EDUCATIONAL LEADERSHIP AND  
COUNSELING

EDLD 519

Measurement and Analysis of Educational Data

August 31-December 18, 2009

Class Location: on-line

Instructor: Patty Kero, Ed.D.

Office Room: 202

Office Phone Number: 243-5623

Office Hours: By appointment

Virtual Office Hours: Tuesdays, 10:00-12:00 pm MST

Virtual Class Week: Runs from Tuesday at 12:01 am to Monday at  
midnight

# **Measurement and Analysis of Educational Data**

## **Course Purpose**

The purpose of this course is to present the necessary understanding of measurement and analysis theory so as to ensure the student of educational leadership is capable of making measurements consistent with the nature of educational data, submitting these data to the appropriate analysis, and drawing constructive conclusions from the analysis.

## **Course Objectives**

To help the student:

1. understand measurement and analysis concepts and terminology,
2. become critical readers of research,
3. grasp the significance and importance of course work in research methods,
4. grasp the significance and implications of measurement and analysis of educational data in the process of improving schools,
5. use computer technology in numerous components of research,
6. view research as a means to integrate curricula,
7. critically evaluate educational data,
8. critique and utilize research methods,
9. understand the relevance of research to practice
10. utilize research as a means to build a personal knowledge base, and
11. utilize research to contribute to an appropriate knowledge base.

## **Mission Alignment**

The Department of Educational Leadership has aligned itself with the mission of The University of Montana-Missoula and the College of Education and Human Sciences Mission. The following mission statements demonstrates this alignment. Learning activities in this course have been designed to address appropriate areas of these mission statements.

### The University of Montana-Missoula Mission

The mission of The University of Montana-Missoula is the pursuit of academic excellence as indicated by the quality of curriculum and instruction, student performance, and faculty professional accomplishments. The University accomplishes this mission, in part, by providing unique educational experiences through the integration of the liberal arts, graduate study, and professional training with international and interdisciplinary emphases. Through its graduates, the University also seeks to educate competent and humane professionals and informed, ethical, and engaged citizens of local and global communities. Through its programs and the activities of faculty, staff, and students, The

University of Montana-Missoula provides basic and applied research, technology transfer, cultural outreach, and service benefiting the local community, region, state, nation and the world.

#### College of Education and Human Sciences Mission Statement

The College of Education and Human Sciences shapes professional practices that contribute to the development of human potential. We are individuals in a community of lifelong learners, guided by respect for knowledge, human dignity, and ethical behavior. We work together producing and disseminating knowledge to advance the physical, emotional, and intellectual health of a diverse society.

#### Educational Leadership Mission Statement

The mission of Educational Leadership at The University of Montana-Missoula is to develop leaders for learning organizations who are guided by respect for knowledge, human dignity, and ethical behavior. This is accomplished by providing high quality academic and professional opportunities. We subscribe to a definition of leadership wherein individuals assume evolving roles within influence relationships requiring their contributions in order to achieve mutual purposes.

### **Masters of Education Culminating Portfolio**

The Masters of Education degree in Educational Leadership requires a culminating portfolio. As part of this portfolio, students will submit a benchmark assignment from each of the required M.Ed. courses. The benchmark assignment for this course is the Data-Driven Instructional Improvement Plan.

### **Course Outcomes and Standards for School Leaders**

The Department of Educational Leadership (EDLD) has adopted the Interstate School Leaders Licensure Consortium (ISLLC) Standards for School Leaders. The ISLLC Standards were developed by the Council of Chief State School Officers and member states in 1996 and later revised in the spring of 2008. The ISLLC Standards are used to guide courses in educational leadership. The six standards are either directly or indirectly addressed in this course. For a detailed explanation of the ISLLC Standards, visit the web site for the Council of Chief State School Officers at [http://www.ccsso.org/content/pdfs/elps\\_isllc2008.pdf](http://www.ccsso.org/content/pdfs/elps_isllc2008.pdf).

### **Expectations**

Students enrolled in this course are expected to demonstrate regular and consistent class participation through weekly asynchronous online discussions in a manner that promotes a scholarly environment where diverse ideas are tolerated and discussion is supported by informed opinion.

Students are required to be current in the assigned reading for each class and to submit required assignments when they are due. Late assignments will be accepted only by prior consent of the instructor. Written assignments will reflect the individual's original work and, when appropriate, follow the style articulated in the *Publication Manual of the American Psychological Association* (APA). All references to works by other authors must be properly cited.

*All students must practice academic honesty. Academic misconduct is subject to academic penalty by the course instructor and/or disciplinary sanction by the University.* You are required to be familiar with the Student Conduct Code. The Student Conduct Code is available for review online at

<http://www.umt.edu/SA/VPSA/index.cfm/page/1321>.

## Online Format

- **Blackboard Assistance:**  
If you are looking for a refresher, or if you are new to the online learning environment, you are encouraged to visit <http://umonline.umt.edu//Studentinfo/>.
- **Class Readings:**  
The two required books will be read and discussed throughout this course. The pages noted for each class reading should be read prior to participating in the group discussions. Not all chapters will be covered in either book so students may wish to read those chapters on their own to get a sense of the author's complete work.
- **Discussions Boards:**  
Each student will be expected to participate in the weekly discussions. Each weekly discussion will be monitored for student participation. Each week students will receive one of the following scores for their participation:

Excellent (3 points)	Good (2 points)	Fair (1 point)	Poor (0 points)
Student actively participates in class by asking questions, and participates in discussions in a thorough, meaningful way that stimulates rich conversation.	Student actively participates in class by asking questions, and participates in discussions in a thorough way that stimulates conversation.	Student rarely participates in class by asking questions, and participates in discussions in a cursory manner.	Student never participates in class by asking questions, or participates in discussions.
Cites one of the textbooks and an outside reading	Cites one of the textbooks	Cites one of the textbooks	Cites no textbooks
Responds to 2 discussion entries by classmates	Responds to 2 discussion entries by classmates	Responds to 1 discussion entry by classmate	Does not respond to any discussion entries

- Submitting Assignments:  
Assignments will be submitted electronically using Blackboard.  
Please see the rubric for scoring the assignments in the section on Assignments.
- Needing Help:  
If you encounter problems regarding this Blackboard Course, please contact UMLearn at <http://umonline.umt.edu/ContactUs/default.htm>. There is also a Tech Support area within the menu of the course shell.

## Required Texts and Readings

Blink, R. (2007). *Data-driven instructional leadership*. Larchmont, NY: Eye On Education.

Van Blerkom, M.L. (2009). *Measurement and Statistics for Teachers*. New York, NY: Routledge.

Other readings as assigned during the course

## Optional Readings

Patten, M.L. (2009). *Understanding research methods: An overview of the essentials* (7<sup>th</sup> Ed.). Glendale, CA: Pycszak Publishing

## Assignments

1. Complete weekly One Minute Essay assignment by class time of the next class (due by Monday at midnight). It is used at the conclusion of the class to help students synthesize and evaluate their understanding of the topic at hand. The point is to get you writing immediately about the topic.
2. Find and critically review a published quantitative research article/paper that should have never been published and prepare a written report that specifically identifies statistical, methodological, logical, and/or other research errors.

**Or** find and review a book/educational journal that discusses issues of and barriers to more effective measurement and analysis of educational data.

Examples of some books that could be chosen:

Lemann, N. (2000). *The big test: The secret history of the American meritocracy*.

Sax, L. (2007). *Why gender matters*. (Chapters: 1-5, 7, 10)

Tannen, D. (1990). *You just don't understand: Women and men in Conversation*.

American Association of School Administrators. (December 2002). The School Administrator. *Data-Driven districts: Applying statistical*

*proof to multiple purposes.*  
 Association for Supervision and Curriculum Development. (Dec. 2008/Jan. 2009). Educational Leadership. *Data: Now what?*

3. Prepare a seven chapter Data-Driven Instructional Improvement Plan for a School in which you discuss:
  - a. Improvement needed  
 An area of improvement needed at a school
  - b. Data collection
  - c. Data reflection
  - d. Data translation  
 Program or curriculum changes at the school level
  - e. Data-driven instructional design  
 Instructional changes at the classroom level
  - f. Design feedback
  - g. Summative/formative assessment

	Poor 0-30 pts	Fair 30-40 pts	Good 40-50 pts
<b>Content &amp; Development</b> 50 %	<p style="text-align: center;"><b>Poor</b></p> <ul style="list-style-type: none"> <li>- Content is incomplete.</li> <li>- Major points are not clear and /or persuasive.</li> </ul>	<p style="text-align: center;"><b>Fair</b></p> <ul style="list-style-type: none"> <li>- Content is not comprehensive and /or persuasive.</li> <li>- Major points are addressed, but not well supported.</li> <li>- Research is inadequate or does not address course concepts.</li> <li>- Content is inconsistent with regard to purpose and clarity of thought.</li> </ul>	<p style="text-align: center;"><b>Good</b></p> <ul style="list-style-type: none"> <li>- Content is comprehensive, accurate, and persuasive.</li> <li>- Major points are stated clearly and are well supported.</li> <li>- Research is adequate, timely and addresses course concepts.</li> <li>- Content and purpose of the writing are clear.</li> </ul>
<b>Organization &amp; Structure</b> 20 %	<p style="text-align: center;"><b>Poor</b></p> <ul style="list-style-type: none"> <li>- Organization and structure detract from the message of the writer.</li> <li>- Introduction and/or conclusion is missing.</li> <li>- Paragraphs are disjointed and lack transition of thoughts.</li> </ul>	<p style="text-align: center;"><b>Fair</b></p> <ul style="list-style-type: none"> <li>- Structure of the paper is not easy to follow.</li> <li>- Introduction is missing or, if provided, does not preview major points.</li> <li>- Paragraph transitions need improvement.</li> <li>- Conclusion is missing, or if provided, does not flow from the body of the paper.</li> </ul>	<p style="text-align: center;"><b>Good</b></p> <ul style="list-style-type: none"> <li>-Structure of the paper is clear and easy to follow.</li> <li>- Introduction provides sufficient background on the topic and previews major points.</li> <li>- Paragraph transitions are present and logical and maintain the flow of thought throughout the paper.</li> <li>- Conclusion is logical and flows from the body of the paper.</li> </ul>

<b>Format 10 %</b>	<b>Poor</b> - Paper lacks many elements of correct formatting. - Citations and references are not provided. - Paper is inadequate/excessive in length.	<b>Fair</b> - Paper follows most guidelines. - Paper provides citations, but they are incorrectly prepared. - Paper provides reference list, with some errors or omissions. - Paper is over/ under word length.	<b>Good</b> - Paper follows designated guidelines. - Citations and references are used appropriately. - Paper is the appropriate length as described for the assignment.
<b>Grammar, Punctuation &amp; Spelling 20 %</b>	<b>Poor</b> - Paper contains numerous grammatical, punctuation, and spelling errors. - Language uses jargon or conversational tone.	<b>Fair</b> - Paper contains few grammatical, punctuation and spelling errors. - Language lacks clarity or includes the use of some jargon or conversational tone.	<b>Good</b> - Rules of grammar, usage, and punctuation are followed; spelling is correct. - Language is clear and precise; sentences display consistently strong, varied structure.

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4. Give class presentations by leading the class discussion with your assigned groups.
5. The final examination will be given to the class during the final week.

## Evaluation Criteria and Course Requirements

ASSIGNMENTS	#	Unit Value	Total Points	Percent of Total
Meet and greet paragraph	1	2	2	1 %
One Minute Essays	14	2	28	14 %
Participation	15	3	45	22.5%
Group leads the class discussion	5	2	10	5 %
Review of research article/or book report	25		25	12.5%
Improvement plan	50		50	25 %
Final exam	40		40	20 %
Total			200	100 %

1. Class participation:  
Students will be expected to attend all virtual classes, interact verbally, and develop discussions beyond the level of the text and/or presentations.
2. Assignments:  
Students are expected to complete all assignments in a timely manner. Assignments are to reflect very high quality of thought and content. All writing assignments are to be word processed using APA format.
3. Final Examination:  
The final examination will be given during final week.



## Tentative Class Topics and Assignment Due Dates

<b>Date</b>	<b>Topic</b>	<b>Assignment</b>
<b>Week 1:</b> Aug 31- Sept 6	Introductions “Meet and Greet” Syllabus Discussion	Due: “Meet and Greet” paragraph  Due: Complete Measurement Pre-Test
<b>Week 2:</b> Sept 7- Sept 13	Introduction to Measurement Assessment, Measurement, Evaluation  Group #1	Reading: VB, Chap. 1  Due: One Minute Essay: “What did I learn this week?”  Presentation-Lead the Discussion
<b>Week 3:</b> Sept. 14- Sept 20	Frames of Reference: Interpreting Test Scores  Group #2	Reading: VB, Chap 2  Due: One Minute Essay: “Give an example of one of the four references.”  Presentation-Lead the Discussion
<b>Week 4:</b> Sept. 21- Sept 27	Developing Objectives  Group #3	Reading: VB, Chap 3  Due: One Minute Essay: “Why is/ isn’t Bloom’s <i>Taxonomy of Cognitive Objectives</i> useful in developing higher thinking skills in students?”  Presentation-Lead the Discussion
<b>Week 5:</b> Sept. 28- Oct. 4	Reliability  Group #4	Reading: VB, Chap 4  Due: One Minute Essay: “What is reliability?”  Presentation-Lead the Discussion

<p><b>Week 6:</b> Oct. 5- Oct. 11</p>	<p>Validity</p> <p>Group #5</p>	<p>Reading: VB, Chap 5</p> <p>Due: One Minute Essay: “Compare Reliability and Validity.”</p> <p>Presentation-Lead the Discussion</p>
<p><b>Week 7:</b> Oct. 12- Oct 18</p>	<p>Producing and Administering Tests Analyzing Tests</p> <p>Group #1</p>	<p>Reading: VB, Chap 10-11</p> <p>Due: Find and critically review a published research article/paper. OR prepare a book report</p> <p>Due: One Minute Essay: “Do you believe a delayed test is a better indicator of real learning?” (p. 134) Why or why not.</p> <p>Presentation-Lead the Discussion</p>
<p><b>Week 8:</b> Oct. 19- Oct.25</p>	<p>Alternative Assessment Techniques Informal Assessments Performance Assessments Portfolios Additional Measurement Issues</p> <p>Group #2</p>	<p>Reading: VB, Chap 12-15</p> <p>Due: One Minute Essay: “What are some advantages of alternative assessments?”</p> <p>Presentation-Lead the Discussion</p>
<p><b>Week 9:</b> Oct. 26- Nov 1</p>	<p>Standardized Tests</p> <p>Group #3</p>	<p>Reading: VB, Chap16</p> <p>Due: One Minute Essay: “Give examples of standardized tests”</p> <p>Presentation-Lead the Discussion</p>

<p><b>Week 10:</b> Nov. 2- Nov. 8</p>	<p>Alternative Ways to Report Test Scores</p> <p>Group #4</p>	<p>Reading: VB, Chap 17</p> <p>Due: One Minute Essay: (Look at your school's test scores on the OPI website) How are your school's scores reported?</p> <p>Presentation-Lead the Discussion</p>
<p><b>Week 11:</b> Nov. 9- Nov. 15</p>	<p>(Veterans Day Holiday Week) Overview of the Data-Driven Instructional System Model Data Collection</p> <p>Group #5</p>	<p>Reading: RB, Chap 1-2</p> <p>Due: One Minute Essay: "Summarize what you learned in the readings."</p> <p>Presentation-Lead the Discussion</p>
<p><b>Week 12:</b> Nov. 16- Nov. 22</p>	<p>Data Reflection Data Translation</p> <p>Group #6</p>	<p>Reading: RB, Chap 3-4</p> <p>Due: One Minute Essay: "How can you use this information in your school?"</p> <p>Presentation-Lead the Discussion</p>
<p><b>Week 13:</b> Nov. 23- Nov. 29</p>	<p>(Thanksgiving Vacation Week) Data-Driven Instructional Design Design Feedback</p> <p>Instructor</p>	<p>Reading: RB, Chap. 5-6</p> <p>Due: One Minute Essay: "What do you still need to know to complete your improvement plan and how are you going to get the information?"</p> <p>Instructor will lead the discussion</p>
<p><b>Week 14:</b> Nov. 30- Dec. 6</p>	<p>Summative and Formative Assessment Summary and Results How to Get Started</p> <p>Instructor</p>	<p>Reading: RB, Chap 7-9</p> <p>Due: One Minute Essay: (Free points, no question this week!)</p> <p>Instructor will lead the discussion</p>

<b>Week 15:</b> Dec. 7- Dec. 13	Post-Test	Due: Improvement Plan  Due: All assignments (except for final examination)
<b>Week 16:</b> Dec. 14	Final Examination	Due: Final examination