THE UNIVERSITY OF MONTANA

PHYLLIS J. WASHINGTON

COLLEGE OF EDUCATION AND HUMAN SCIENCES

DEPARTMENT OF EDUCATIONAL LEADERSHIP

EDLD 519
Measurement and Analysis of Educational Data
July 2- July 20, 2012
3:00 – 6:00 PM

(Please turn off cell phones while in class.)

Class Location: Room 322

Instructor: Patty Kero, Ed.D.
Office Room: 206
Office Phone Number: 243-5623
patty.kero@mso.umt.edu
Office Hours: By appointment
Measurement and Analysis of Educational Data

Course Purpose
The purpose of this course is to present the understanding of measurement and analysis theory necessary to ensure that the student of educational leadership is capable of making measurements consistent with the nature of educational data, submitting these data to 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 a critical reader 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. interpret and analyze assessment data,
11. present data-driven improvement plans in a manner easily understandable by stakeholders,
12. utilize research as a means to build a personal knowledge base, and
13. utilize research to contribute to an appropriate knowledge base.

Instructional Methods
Instructional methods will utilize “hands on” as the primary means of learning. This course will provide a number of teaching and learning formats to promote individual personal and professional growth, and to advance group interactions with all participants. Formats will include large class presentations, small class process groups, reflective and synthesis writing, problem-solving case study activities, cooperative learning activities, structured book discussions, individual/group research, guest speakers, lectures, and independent reading. Computer technology will be used in the class.

Evaluation Criteria and Course Requirements

<table>
<thead>
<tr>
<th>REQUIRED ASSIGNMENTS</th>
<th>#</th>
<th>Unit Value</th>
<th>Total Points</th>
<th>Percent of Total</th>
<th>Your Score</th>
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<tbody>
<tr>
<td>Class attendance, participation, and quizzes</td>
<td>14</td>
<td>3</td>
<td>42</td>
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<td>DDIIP and presentation</td>
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<td>Research Review Article</td>
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<td>Exams: Mid-term and Final Statistics Tests</td>
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<td>Field Experience(not graded but required)</td>
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Missing assignments will result in a grade of Incomplete (I). A late assignment will receive a reduction in points.

Course Required Assignments

1. **Daily attendance and participation:** Attendance records start with the first day of class. One unexcused absence results in your final course grade being lowered ½ letter grade. Two unexcused absences result in your final course grade being lowered one full letter grade, etc.

Because of the intensive schedule of the class, student attendance at all class meetings is essential. You will be expected to attend all classes, interact verbally, and develop discussions beyond the level of the text and/or presentations. The value of class attendance and participation is immeasurable. Please make arrangements with another student to take notes for you if you must miss class.

**Discussion Rubric:**

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<tr>
<th>Excellent (3 points)</th>
<th>Good (2 points)</th>
<th>Fair (1 point)</th>
<th>Poor (0 points)</th>
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<tbody>
<tr>
<td>Student actively participates in class by asking questions, and participates in discussions in a thorough, meaningful way that stimulates rich conversation.</td>
<td>Student actively participates in class by asking questions, and participates in discussions in a thorough way that stimulates conversation.</td>
<td>Student rarely participates in class by asking questions, and participates in discussions in a cursory manner.</td>
<td>Student never participates in class by asking questions, or participates in discussions.</td>
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<tr>
<td>Cites one of the textbooks and an outside reading</td>
<td>Cites one of the textbooks</td>
<td>Cites one of the textbooks</td>
<td>Cites no textbooks</td>
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2. **Daily quiz:** Complete quiz during the first few minutes of class. It is used to get the mind thinking about the information covered in the previous class. Some class periods we will complete the quiz during the last few minutes of class. 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 you have learned.

3. **Daily assignments:** Complete assignments and be prepared for next class. Most often you will be assigned weekly tasks to complete before the next class, which you will be expected to bring with you to class.

4. **Data-Driven Instructional Improvement Plan (DDIIP) (Appendix F, G, and Rubric):** Prepare a five chapter research paper in which you discuss a research problem, data collection, null hypothesis, and statistical procedures as covered in class. You will then generate dummy data, run a statistical analysis of the data, report the findings, make a decision regarding your hypothesis, and formulate your conclusion. Examples of exemplary assignments will be presented in class. Assignments are to reflect very high quality of thought and content. Written assignments must be presented in APA format. This assignment must be turned in to the professor on the date that has been assigned. All work must be completed by the deadlines indicated. Reduction of credit will be given to assignments submitted after due dates. (Please see Appendix F and G.) DO NOT START THIS ASSIGNMENT UNTIL WE COMPLETE ONE IN CLASS.

5. **Brief presentation:** Prepare a brief presentation regarding your five chapter DDIIP.
6. **Research review:** 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. If possible discuss barriers to more effective measurement and analysis of educational data. Examples of exemplary assignments will be presented in class when we discuss how to lie with statistics and the worst statistics. Assignments are to reflect very high quality of thought and content. Written assignments must be presented in APA format. This assignment must be turned in to the professor on the date that has been assigned. (Please see Appendix E.)

7. **Random Act of Kindness:** Do a random act of kindness for someone you do not know. A summary paper, one page in length, will be completed and turned in. Include in the paper a summary of what you did, why you did it, and your reactions after the kindness was rendered.

   a. *No act of kindness, no matter how small, is ever wasted.* ~Aesop

   b. About the book titled, *Aging with Grace: What the Nun Study Teaches Us About Leading Longer, Healthier, and More Meaningful Lives* by David Snowdon, Ph.D:

      “There are lessons for all of us in this moving account of the School Sisters of Notre Dame and their commitment to helping us find the causes of Alzheimer’s disease. I came away with a new respect for the power of faith as well as the beauty and complexity of the human brain.”

      Virginia Bell, M.S.W.

8. **Mid-term and Final Exams:** The mid-term examination will be given during the midway point of the course. Examinations are required to be taken in class. There will be NO make-up exams for any reason. All exams must be taken when scheduled. Any student with a 60% or lower score must make corrections and return to Dr. Kero within one week. The student must also schedule an appointment to discuss the course with Dr. Kero.

    The final examination will be on the last day of class. Examinations are required to be taken in class. There will be NO make-up exams for any reason. There may be a take-home section handed out a week or two before the last class. Your graded final will be available in the EDLD office (Room 213) the following semester.

9. **Final Exams: Concept Map**

    The final exam will be taken on the last day of class. It may be taken on the computer (using bubbl.us) or on large poster paper (using pens and markers). Students will create a concept map of the course. Concept maps (sometimes called mind maps) are graphical tools for organizing and representing knowledge and understanding. The maps should include statistic concepts, usually enclosed in circles or boxes of some type, and then relationships between the concepts indicated by a connecting line linking two concepts. (As an in-class project, we will conduct a preliminary test during the first or second week as cooperative learning experience.)

    The statistic exam will be comprehensive. More details will be discussed in class.
10. **Fieldwork Experience:** The fieldwork project is designed to foster applied learning with best practices in the field. This project provides you with the opportunity to bring together leadership theory and practice in actual K-12 educational environments. Please review the fieldwork requirements on the EDLD website.

**Required Texts and Readings**


**Readings (Optional)**


**Additional Assigned Readings May Include:**


**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 assignments for this course are the Data-Driven Instructional Improvement Plan (DDIIP) and the Analysis of National and State Accountability and Achievement Data.
Important Notice
Students enrolled in this course are expected to demonstrate regular and consistent class participation that promotes a scholarly environment where diverse ideas are tolerated and discussion is supported by informed opinion.

Students may work together or independently on assignments. However, all work turned in must be original. Assignments that are duplicates or, in my judgment, clones, will be returned without credit or grade. No work may be plagiarized. If you are quoting another source, you must cite the source. Much of what is to be learned in this class is learned by attending class and participating in discussions. It is important to attend all classes if you are working for an A. Please let me know if you must miss class.

All students must practice academic honesty. Academic misconduct is subject to academic penalty by the course instructor and/or disciplinary sanction by the University. Students 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
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.

In addition, students are required to be current in the assigned reading for the course and to submit and/or present required assignments in a timely manner. Late assignments will be accepted only by prior consent of the instructor. Please turn off cell phones.

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. (Please see Appendix C.)

Useful Websites:
Buros Institute of Mental Measurements http://www.unl.edu/buros/
Census Data Results for 2010 http://2010.census.gov/2010census/
ERIC Clearinghouse on Assessment and Evaluation http://ericae.net/
Journal of Educational Policy Analysis http://olam.ed.asu.edu/epaa/
Montana Office of Public Instruction http://opi.mt.gov
National Center for Education Statistics http://nces.ed.gov/
No Child Left Behind www.nochildleftbehind.org
No Child Left Behind Research Standards http://www.ed.gov/about/offices/list/ies/news.html#guide
## Tentative Class Topics and Assignment Due Dates

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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Assignment</th>
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<tr>
<td><strong>Day 1:</strong></td>
<td><strong>July 2</strong></td>
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<td><strong>Introduction to Measurement and Analysis</strong></td>
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<td>- Syllabus Discussion</td>
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<td>- Introduction to Measurement</td>
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<td>- Assessment, Measurement, Evaluation</td>
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<td>- Introduction to Educational Data websites:</td>
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<td>- <a href="http://www.census.gov">www.census.gov</a> U.S. Census</td>
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<td>- [www opi.state.mt.us](<a href="http://www">http://www</a> opi.state.mt.us) Montana OPI</td>
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<td>- <a href="http://www.nces.ed.gov">www.nces.ed.gov</a> NCES</td>
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<td>- <a href="http://www.babynamewizard.com">http://www.babynamewizard.com</a></td>
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<td>- <a href="http://www.gapminder.org">http://www.gapminder.org</a> Stats-worldwide</td>
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<td></td>
<td><strong>Data Driven Decision Making</strong></td>
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<td>1. College and career readiness: Student Performance</td>
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<td>- Baseline, Resource Alignment, Student Outcomes, Programs and Practices</td>
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<td>2. Keeping kids in school: Using Data</td>
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<td>- Warning Signs</td>
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<td>- Introduction to Research</td>
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<td>- Definitions</td>
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<td><strong>Day 2:</strong></td>
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<td>Date First Video</td>
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<td>- Guiding questions: “How are we doing?”</td>
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<td>- Compared to Standards, Ourselves, &amp; Others</td>
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<td>- Why Teachers Matter?</td>
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<td><strong>July 4</strong></td>
<td><strong>No class! Holiday</strong></td>
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<td>Day 3:</td>
<td>July 5</td>
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<td>Stem and Leaf</td>
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<td>Box and Plot</td>
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<td>Charts and Graphs</td>
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<td>Measures of Central Tendencies</td>
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<th>July 6</th>
<th>Data Driven Decision Making</th>
<th>Hardware, Software, and People</th>
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<td>Data First video: Stacked Columns: Measures of Variability Standard Deviation</td>
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<td>Picciano: Chapter 3</td>
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<th>July 9</th>
<th>Data Driven Decision Making</th>
<th>Educational Research Methods and Tools</th>
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<td>Data First video: Leading and Lagging Indicators</td>
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<td><strong>Statistics</strong></td>
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<td>Standard Scores (z-scores)</td>
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<td>Standard Scores and the Normal Curve</td>
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<td>Validity: Assessment’s Cornerstone</td>
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<td>Test Reliability</td>
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<th>July 10</th>
<th>Data Driven Decision Making</th>
<th>Teachers and Administrators as Researchers</th>
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<td>Data First video: Scatter plots</td>
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<td>Linear Regression</td>
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<td><strong>Readings</strong>:</td>
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<td><strong>Due</strong>:</td>
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<td>Day 7: July 11</td>
<td>Summer Seminar at the Park</td>
<td>Articles Assigned</td>
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<td>This summer seminar will focus on professional learning communities (PLC). We will review the foundations of PLCs, and how as school leaders to create, facilitate, and support the development and continual growth of a PLC. We will read a couple excerpts from current literature discussing what are PLCs and how to support them. At our meeting, we will collaboratively discuss and walk through some possible scenarios in creating PLCs.</td>
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| Day 8: July 12 | Data Driven Decision Making School and the Community | Readings: |
|               | Statistics Populations and Samples Introduction to Probability | Picciano: Chapter 6 and 7 |

| Day 9: July 13 | Data Driven Decision Making Financial Management and Budgeting | Readings: |
|               | Statistics Probability and the Normal Curve Standard Error of the Mean | Picciano: Chapter 8 |

| Day 10: July 16 | Data Driven Decision Making Supporting Teaching and Learning | Readings: |
|                 | Statistics Conference Interval for the Mean Null Hypothesis | Picciano: Chapter 9 |

| Day 11: July 17 | Data Driven Decision Making Supporting Teachers and their Professional Development | Readings: |
|                 | Statistics t-test | Picciano: Chapter 10 |

| Day 12: July 18 | Data Driven Decision Making Review of Stats Internet | Readings: |
|                | Statistics t-test | Picciano: Chapter A and E |
| Day 13:  
July 19 | Data Driven Decision Making  
Review of Stats  
Internet  
Presentations  
Statistics  
chi-square | Due: Presentations  
Due: ALL ASSIGNMENTS |
| Day 14:  
July 20 | Data Driven Decision Making  
Presentations  
Statistics  
Exams: Concept Map and Final |  |
Suggested Reading


Cromeys, A., “Using Student Assessment Data: What Can We Learn from Schools?” North Central Regional Educational Laboratory, Policy Issues Brief No. 6, November 2000.


APPENDIX A

PROFESSIONAL STANDARDS FOR STUDENT PERFORMANCE

Graduate students in the Department of Educational Leadership at The University of Montana are expected to:

- Demonstrate professional vision in the practice of educational administration
- Accept responsibility and accountability for class assignments in their role as members of the class
- Demonstrate growth during the period of their graduate career
- Demonstrate good decision making and an awareness of organizational issues from a variety of perspectives
- Demonstrate imagination and originality in the discussion of educational leadership issues
- Understand the relationship between theory and practice and the value of reflective leadership
- Demonstrate a moral, humanistic, ethical and caring attitude toward others
- Demonstrate an ability to build trust and positive relationships with others
- Demonstrate a tolerance for diversity and a warm acceptance of others regardless of their backgrounds or opinions
- Demonstrate emotional stability and an ability to work well with other members of the class, including the instructor
- Demonstrate an ability to express himself/herself well in speech and writing, and
- Demonstrate mastery of fundamental knowledge of course content and an understanding of its application

FAILURE TO DEMONSTRATE THE AFOREMENTIONED QUALITIES ON A CONSISTENT BASIS MAY RESULT IN REMOVAL FROM CLASSES AND/OR THE EDUCATIONAL LEADERSHIP PROGRAM.
APPENDIX B

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.

Phyllis J. Washington 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.
APPENDIX C

ISLLC Standards for School Leaders

Standard 1: A school administrator is an educational leader who promotes the success of all students by facilitating the development, articulation, implementation, and stewardship of a vision of learning that is shared and supported by the school community.

Standard 2: A school administrator is an educational leader who promotes the success of all students by advocating, nurturing, and sustaining a school culture and instructional program conducive to student learning and staff professional growth.

Standard 3: A school administrator is an educational leader who promotes the success of all students by ensuring management of the organization, operations, and resources for a safe, efficient, and effective learning environment.

Standard 4: A school administrator is an educational leader who promotes the success of all students by collaborating with families and community members, responding to diverse community interests and needs, and mobilizing community resources.

Standard 5: A school administrator is an educational leader who promotes the success of all students by acting with integrity, fairness, and in an ethical manner.

Standard 6: A school administrator is an educational leader who promotes the success of all students by understanding, responding to, and influencing the larger political, social, economic, legal, and cultural context.
APPENDIX D
Montana PEPP Standards and Procedures

Montana Professional Educator Preparation Program Standards and Procedures
  For a more detailed explanation of the PEPP Standards, visit the web site for OPI website:

10.58.705 SCHOOL PRINCIPALS, SUPERINTENDENTS, SUPERVISORS AND CURRICULUM DIRECTORS
  (1) The program requires that successful candidates:
  (a) facilitate the development, articulation, implementation, and stewardship of a school or district vision of learning supported by the school community in order to promote the success of all students;
  (b) promote a positive school culture, provide an effective instructional program, apply best practice to student learning, and design comprehensive professional growth plans for staff in order to promote the success of all students;
  (c) manage the organization, operations, and resources in a way that promotes a safe, efficient, and effective learning environment in order to promote the success of all students;
  (d) collaborate with families and other community members, respond to diverse community interests and needs, including Montana American Indian communities, and mobilize community resources in order to promote the success of all students;
  (e) act with integrity, fairness, and in an ethical manner in order to promote the success of all students;
  (f) understand, respond to, and influence the larger political, social, economic, legal, and cultural context in order to promote the success of all students; and
  (g) complete an internship/field experience that provides at least 216 hours of significant opportunities to synthesize and apply the knowledge and practice and develop the skills identified in this rule through substantial, sustained, standards based work in real settings, planned and guided cooperatively by the institution and properly administratively endorsed school district personnel for graduate credit.
APPENDIX E

Review of Research Article

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. Examples of exemplary assignments will be presented in class. Assignments are to reflect very high quality of thought and content. Written assignments must be presented in APA format. This assignment must be turned in to the professor on the date that has been assigned.

How to find a quantitative research article/paper/dissertation?
1. Search ERIC online to find the article/paper/dissertation. Students should be searching ERIC every week, thus becoming familiar with the search process and finding research that is of interest.
2. Search the library in person to find the article/paper/dissertation. Look for journals of interest such as the American Educational Research Journal.

What part of the research?
1. Examine the whole research article/paper, not just part of it such as the summary. The student must go to the research as published by the researcher rather than a secondary source summarizing the research.
2. Attach the title page and abstract of the article/paper/dissertation to your review.

What to look for in the quantitative article/paper/dissertation?
1. Research Problem: Is a research problem stated?
2. Population and Sample: What is the population? What is the sample? (The sample must have at least 30.) Is it the correct size to represent the population from which it is sampled? Is the sample random? (90% of research articles/papers cannot meet these criteria alone!) This is very simple for students to read and determine. Were the findings generalized to anyone who did not have an equal chance to be part of the sample? (This error is present in 99% of the research out there.)
3. Variables: What are the variables? Are they defined? That is, if education is one of the variables, has education been defined? If not, then the research lacks validity because if you do not define what you are going to measure, then you have no idea what you have found after measurement. You cannot measure what you cannot define. No definition, then no findings.
4. Level of measurement: What is the level of data? Has non interval/ratio data been used in tests requiring interval/ratio level data? For example, have means etc. been calculated on ordinal data? If so, then the findings are not mathematically meaningful.
5. Statistic: What statistical procedure was used? What is appropriate? Here, students are limited in research they critique to a correlation/regression study or t-test study so they will be familiar with the stats being used. Students can easily do this by doing a search on research and requiring that the word “regression” or whatever be used in the search criteria.
6. *a priori*: Has the magnitude of importance for the relationship (correlation) or mean difference (t-test) been established *a priori*? That is, did the researcher wait until the findings were in before deciding what would be an important finding?

7. Words used in the research: Are the words biased? For example, an author might discuss “manipulating” the numbers, or may state that the researcher completed five studies and because of not finding the desired results conducted a sixth and final study and thus finally found what was wanted!

Requirements for the review

1. APA format (title page, reference page, numbered pages, double-spaced, etc.)
2. Pages requirements: One title page, two-three pages for the body of the assignment, and one page for references.
3. This assignment must be turned in to the professor on the date that has been assigned.
APPENDIX F

General Topics for the Five-Chapter Research Paper

IS THERE A RELATIONSHIP BETWEEN:
1. Amount of coffee undergraduate students drink on the day of the interpersonal communication midterm exam and their achievement on the exam?
2. How many hours of moderate intensity exercise a student engages in per week and the student’s rating on the Body Mass Index (B.M.I.)?
3. The number of public speaking classes attended per semester and the academic performance of students enrolled in Public Speaking 101 at the UM?
4. The number of verified practice hours of driving time and the score of the student on the state-mandated driving exam?
5. Amount of time spent with families per week and a student’s GPA at the end of the semester?
6. The amount of vegetable intake for a family per week and the amount of household annual income?
7. Amount of time students study for the final examination in statistics and the score they earn on it?
8. The amount of time a female student spends doing physical activity and her weight in pounds?
9. The amount of beers that a student drinks in a week and the percentage on the final exam?
10. The number of ounces of candy that a student eats and the number of cavities that he/she has in a year?
11. The number of parking tickets that a student receives and the GPA at the end of the semester?
12. The amount of time in hours spent in the library and the percentage scores on the mid-term exam?
13. The number of days hunting and the number of big game killed?
14. The amount of store sales in a month and the size (in square feet) of the store?
15. The amount of labor hours that it takes a moving company employee to move household goods and volume of goods (in cubic feet)?
16. The level of intervention (hours of training) and the number of injuries in college athletes?
17. The height and weight of 35 sixth graders?
18. Income (annual income in dollars) and level of education (years of education)?
19. The number of wins last season in tennis and the average number of weekly injuries?
APPENDIX G

Prepare a five chapter research paper in which you discuss a research problem, data collection, null hypothesis, and statistical procedures as covered in class. You will then generate dummy data, run a statistical analysis of the data, report the findings, make a decision regarding your hypothesis, and formulate your conclusion. Examples of exemplary assignments will be presented in class. Assignments are to reflect very high quality of thought and content. Written assignments must be presented in APA format. This assignment must be turned in to the professor on the date that has been assigned.

Checklist of the elements in the assignment:

1. APA format
   a. Chapters: each chapter begins on a new page
   b. Headings: headings are centered on the page
   c. Title page: title page is attached
   d. Spacing: double-spacing occurs throughout the paper
   e. Pages: pages are numbered
   f. Other: follows APA format

2. Attachments
   a. Excel: copy of Excel sheet with the raw data
   b. Excel: copy of Excel sheet with the statistical analysis of the data
   c. Sample size: copy of Raosoft Sample Size calculator
   d. Tables copy of appropriate tables, charts, graphs

3. Statistics

<table>
<thead>
<tr>
<th>Stats for a Correlation</th>
<th>Stats for a t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two variables that are at an interval/ratio level of data</td>
<td>Two variables that are at an interval/ratio level of data</td>
</tr>
<tr>
<td>Two variables that are appropriate for a correlation</td>
<td>Two variables that are appropriate for a correlation</td>
</tr>
<tr>
<td>Sample size that is the correct size to represent the population</td>
<td>Sample size that is the correct size to represent the population</td>
</tr>
<tr>
<td>Correct statistics used for Correlation</td>
<td>Correct statistics used for Correlation</td>
</tr>
<tr>
<td>Pearson r is reported in a decimal; r² is reported in a percent</td>
<td>Both the observed and critical value of t are reported and explained</td>
</tr>
<tr>
<td>Table 10 must be attached and the critical value circled</td>
<td>Table 4 or 5 must be attached and the critical value circled</td>
</tr>
<tr>
<td>Null hypothesis: reject or fail to reject</td>
<td>Null hypothesis: reject or fail to reject</td>
</tr>
</tbody>
</table>
APPENDIX H

Administrative Biography

Patty Kero

Patty M. Kero, Ed.D., is an Assistant Professor of Education in the Department of Educational Leadership at the P.J.W. College of Education and Human Sciences of The University of Montana. She holds an Ed.D. from The University of Montana in Educational Leadership; a M.Ed. from Harvard University in Administration, Planning, and Social Policy; and a B.A. from The University of Montana in Elementary Education.

Professor Kero has taught seventeen consecutive years in the Pre K-12 setting: five years in Montana and twelve years in Washington. Her fifteen years of elementary and secondary administrative experience in public school settings in Nevada, Idaho, and Montana included assistant principal, principal, Title 1 director, and superintendent. Educators, locally and nationally, have studied her school in Nevada after they won Redbook's nationally recognized America’s Best Schools award and her school in Idaho was the national winner of “What Parents Want in Their Schools.” While in Idaho, she also worked with Barbara Morgan, NASA’s Teacher in Space astronaut.

For six years, she taught as an adjunct for Sierra Nevada College and Great Basin College in Elko, Nevada. While earning her Master’s, she worked at the Harvard Principals’ Center with Roland Barth and Richard Ackerman. As a professor at UM, she has taught undergraduate and graduate courses in the areas of statistics and school administration including analysis of educational data, supervision and evaluation, public relations, and advanced educational statistics.

Working as a Due Process Hearing Officer in Nevada, she served the students who were identified as needing special education services. Her published article in Kappan addressed special education issues in schools. Her research interests are brain-based learning and teaching, leadership in education, and legal issues surrounding schools. Her leadership commitment has been to advocate for successful continuous learning and teaching for all members of the educational community, by serving the educational needs of all, regardless of age, gender, cultural group identity, or abilities.
APPENDIX I

Assignment

Paper Title

by
Your Name

Submitted to
Dr. Patty Kero

In Partial Fulfillment of the Requirements of
EDLD 519: Measurement and Analysis of Educational Data

Summer 2012
<table>
<thead>
<tr>
<th>Component</th>
<th>EDLD519</th>
<th>Student ID</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Analyze and Apply the Knowledge and</strong></td>
<td></td>
<td>Exemplary</td>
<td>18-20 points</td>
</tr>
<tr>
<td><strong>Understanding</strong></td>
<td></td>
<td>Acceptable</td>
<td>The student clearly exhibits outstanding ability to articulate a school-wide plan analyzing and applying the appropriate data-driven practices to improve educational outcomes.</td>
</tr>
<tr>
<td><strong>Creative Thinking</strong></td>
<td></td>
<td>Unacceptable</td>
<td></td>
</tr>
<tr>
<td>The student is highly adept at creatively articulating the process of decision-making with data on a particularly complex educational issue. The student enthusiastically attempts original and appropriate ways, methods or strategies of approaching the complex ideas, monitors the progress, and evaluates the success based on their deep understanding of his/her discipline. The student clearly goes beyond what is known and stretches in new directions.</td>
<td>The student is adept at creatively articulating the process of decision-making with data on a particularly complex educational issue. The student attempts new ways, methods or strategies of approaching the complex ideas, monitors the progress, and evaluates the success. The student goes beyond what is known and stretches in new directions.</td>
<td>The student is not adept at creatively articulating the process of decision-making with data on a particularly complex educational issue. The student does not attempt new ways, methods or strategies of approaching the complex ideas, monitors the progress, and evaluates the success. The student does not go beyond what is known and stretches in new directions.</td>
<td></td>
</tr>
<tr>
<td><strong>Montana PEPPS: facilitate the development, articulation, implementation, and stewardship of a school or district vision of learning supported by the school community in order to promote the success of all students</strong></td>
<td></td>
<td>Exemplary</td>
<td>The student clearly articulates a well developed improvement plan (using the format of Data Wise: A Step by Step Guide to Using Assessment Results to Improve Teaching and Learning) for the facilitation and implementation of a shared vision for using data to make decisions.</td>
</tr>
<tr>
<td><strong>Montana PEPPS: Promote a positive school culture, provide an effective instructional program, apply best practice to student learning, and design comprehensive professional growth plans for staff in order to promote the success of all students</strong></td>
<td></td>
<td>Acceptable</td>
<td>The student demonstrates an impressive depth of knowledge and level of synthesis in articulating how data-driven decision making promotes a positive school culture, an effective instructional program, and applies it to best practices in teaching and learning.</td>
</tr>
<tr>
<td><strong>Format</strong></td>
<td></td>
<td>18-20 points</td>
<td>The student includes and properly identifies all nine chapters (aligned to the corresponding chapters in the textbook) and appendices. The student includes and properly explains visuals such as charts, graphs, and tables. Further, the student demonstrates understanding on statistics.</td>
</tr>
<tr>
<td><strong>Mechanics</strong></td>
<td></td>
<td>14-17 points</td>
<td>The student follows APA format and mechanical errors do not detract from the paper.</td>
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</table>
## APPENDIX J

<table>
<thead>
<tr>
<th>EDLD519</th>
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### Component

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<th>Acceptable</th>
<th>Unacceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>The student clearly exhibits outstanding ability to articulate a school-wide plan analyzing and applying the appropriate data-driven practices to improve educational outcomes.</td>
<td>18-20 points</td>
<td>14-17 points</td>
<td>0-13 points</td>
</tr>
<tr>
<td>The student exhibits ability to articulate a school-wide plan analyzing and applying the appropriate data-driven practices to improve educational outcomes.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The student does not adequately exhibit ability to articulate a school-wide plan analyzing and applying the appropriate data-driven practices to improve educational outcomes.</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Creative Thinking</th>
<th>Exemplary</th>
<th>Acceptable</th>
<th>Unacceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>The student is highly adept at creatively articulating the process of decision-making with data on a particularly complex educational issue. The student enthusiastically attempts original and appropriate ways, methods or strategies of approaching the complex ideas, monitors the progress, and evaluates the success based on their deep understanding of his/her discipline. The student clearly goes beyond what is known and stretches in new directions.</td>
<td>18-20 points</td>
<td>14-17 points</td>
<td>0-13 points</td>
</tr>
<tr>
<td>The student is adept at creatively articulating the process of decision-making with data on a particularly complex educational issue. The student attempts new ways, methods or strategies of approaching the complex ideas, monitors the progress, and evaluates the success. The student goes beyond what is known and stretches in new directions.</td>
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</tr>
<tr>
<td>The student is not adept at creatively articulating the process of decision-making with data on a particularly complex educational issue. The student does not attempt new ways, methods or strategies of approaching the complex ideas, monitors the progress, and evaluates the success. The student does not go beyond what is known and stretches in new directions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Montana PEPPS: facilitate the development, articulation, implementation, and stewardship of a school or district vision of learning supported by the school community in order to promote the success of all students</td>
<td>18-20 points</td>
<td>14-17 points</td>
<td>0-13 points</td>
</tr>
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</tr>
<tr>
<td>The student clearly articulates a well-developed improvement plan for the facilitation and implementation of a shared vision for using data to make decisions.</td>
<td>The student clearly articulates an improvement plan for the facilitation and implementation of a shared vision for using data to make decisions.</td>
<td>The student fails to articulate an improvement plan for the facilitation and implementation of a shared vision for using data to make decisions.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Montana PEPPS: Promote a positive school culture, provide an effective instructional program, apply best practice to student learning, and design comprehensive professional growth plans for staff in order to promote the success of all students</th>
<th>18-20 points</th>
<th>14-17 points</th>
<th>0-13 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>The student demonstrates an impressive depth of knowledge and level of synthesis in articulating how data-driven decision making promotes a positive school culture, an effective instructional program, and applies it to best practices in teaching and learning.</td>
<td>The student demonstrates a depth of knowledge and level of synthesis in articulating how data-driven decision making promotes a positive school culture, an effective instructional program, and applies it to best practices in teaching and learning.</td>
<td>The student fails to demonstrate an impressive depth of knowledge and level of synthesis in articulating how data-driven decision making promotes a positive school culture, an effective instructional program, and applies it to best practices in teaching and learning.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Format</th>
<th>18-20 points</th>
<th>14-17 points</th>
<th>0-13 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>The student includes and properly identifies all five chapters. The student includes and properly explains visuals such as charts, graphs, and tables. Further, the student demonstrates understanding on statistics.</td>
<td>The student includes all five chapters. The student includes and explains visuals such as charts, graphs, and tables. Further, the student demonstrates understanding on statistics.</td>
<td>The student includes the five chapters. The student fails to include and explains visuals such as charts, graphs, and tables. Further, the student fails to demonstrate understanding on statistics.</td>
<td></td>
</tr>
<tr>
<td>18-20 points</td>
<td>14-17 points</td>
<td>0-13 points</td>
<td></td>
</tr>
<tr>
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<td>--------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td><strong>Mechanics</strong></td>
<td>The student follows APA format.</td>
<td>The student follows APA format and mechanical errors do not detract from the paper.</td>
<td>The student partially follows APA format and mechanical errors are minimal.</td>
</tr>
</tbody>
</table>
# APPENDIX K

## Sources of Accountability

<table>
<thead>
<tr>
<th>Sources of Accountability</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Appendix A: National      | No Child Left Behind (NCLB)  
Race to the Top  
Common Core State Standards,  
Adequate Yearly Progress (AYP),  
National Assessment of Educational Progress (NAEP)  
Free and Reduced Lunch  
Response to Intervention (RtI)  
Individuals with Disabilities Education Act (IDEA)  
Highly Qualified Teachers (HQT)  
Even Start Literacy Program  
Gun-Free Schools Act  
English Language-Learners  
Title 1  
Title II-Improving Teacher Quality Grants  
Title III Part A-English Acquisition and Enhancement  
Title IV-Safe Schools  
Title V-Innovative Programs, Character Education  
Title VI-Rural Education  
Title X Part C-Education of Homeless Children |

| Appendix B: State         | Montana OPI: Reports and Data: Measurement and Accountability  
Measured Progress  
MontCAS/CRT’s,  
Common Core State Standards Initiative  
Indian Education for All  
Fall Report  
Accreditation Standards  
Coordinated School Health Program  
School Wellness Policy  
Tobacco Use Prevention Program  
E-Rate  
Graduation Matters-Montana  
Montana Behavioral Initiative (MBI)  
Neglected, Delinquent Youth Program  
School Nutrition Program |

| Appendix C: Local         | Graduation Matters-Missoula,  
School Board Policy  
Creative Classroom Grants |
| greatest impact on your school? Why? | MUD Project-Missoula Urban Demonstration Project  
Missoula Outdoor Learning Adventures (MOLA)  
Big Brother/Big Sisters-Missoula  
Missoula Flagship Program  
Olweus Bully Prevention Program- Hellgate Elementary District |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Appendix D: Continuous School Improvement Plan | **Yearly Action Plan, Yearly Effectiveness Report**  
The Board of Public Education established the goal that all school districts develop, implement, evaluate, and revise a single five-year comprehensive education plan to ensure continuous education improvement for all students and all schools.  
**Write about one aspect of your school’s improvement plan that has the greatest impact on the improvement of teaching and learning.** |
| Appendix E: A Creative Way to Address Accountability | **Write about one additional tool that your school could use as a source of accountability that is NOT being used presently. Please be creative!**  
*For example: Authentic accountability, measurements, assessments, senior projects, culminating portfolio presentations* |
| Appendix F: Montana State Student Information System | Montana has a Student Information System titled Achievement in Montana (AIM). This system reports student-related data from school districts to OPI, including enrollment, demographic data, eligibility for state and federal education programs, registration for the statewide assessments, and special education planning and reporting.  
**Write about your practical experience with inputting data into the program or reading the AIM reports.** |
| Appendix G: National Assessment of Educational Progress | NAEP operates on a two-year cycle, with major assessments taking place in odd-numbered years, and much smaller, limited assessments and special studies taking place in even-numbered years. In even-numbered years, Montana usually has fewer than fifteen schools in the national sample, and in 2012, the number is zero. Altogether, fourteen states have no schools participating this year. Montana will participate in the Reading and Mathematics assessments in 2013, the next "big NAEP" year.  
**Write about something that you learned about the NAEP in Montana from the Montana OPI website:**  
[http://opi.mt.gov/Reports&Data/index.html?gpm=1_5#gpm1_9](http://opi.mt.gov/Reports&Data/index.html?gpm=1_5#gpm1_9) |
<p>| Appendix H: Indian Education Data, Research and Reports | <strong>Write about something that you learned about the Indian Education Data in Montana from the Montana OPI website:</strong> |</p>
<table>
<thead>
<tr>
<th>Appendix I: Reports and Data, Measurement and Accountability</th>
<th>Write about something that you learned about the Graduation Rates in Montana from the Montana OPI website: <a href="http://opi.mt.gov/Reports&amp;Data/Measurement/Index.html">http://opi.mt.gov/Reports&amp;Data/Measurement/Index.html</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://opi.mt.gov/Reports&amp;Data/index.html?gpm=1_5#gpm1_7">http://opi.mt.gov/Reports&amp;Data/index.html?gpm=1_5#gpm1_7</a></td>
<td></td>
</tr>
</tbody>
</table>
The “Data Wise” Improvement Process: Eight steps for using test data to improve teaching and learning

by Kathryn Parker Boudett, Elizabeth A. City, and Richard J. Murnane

Prepare
1. Organize for Collaborative Work: Schools develop a data team to gather data from many sources and then set up schedules to allow school personnel to collaborate in their examination of the data.

2. Build Assessment Literacy: Educators learn the basics of assessment terminology and learn how to both analyze and talk about the data.

Inquire
3. Create a Data Overview: Educators create a concise summary of student achievement results that inspires rather than overwhelms. The summary is intended to show what students are learning and reveal gaps in that understanding.

4. Dig into Data: Now that the data is available, educators look at a broader range of student work, such as projects, classwork, and homework, to provide more clarity on what the data has shown. Through this step, educators discover gaps in certain areas that are common to large numbers of students.

5. Examine Instruction: Educators look at how classroom instruction has affected poor student performance in areas revealed by digging into the data. They identify an area that they want to tackle through collaboration.

Act
6. Develop an Action Plan: The team decides to address a certain area and designs a professional development program to support educators who will put that plan into action.

7. Plan to Assess Progress: Educators set goals — both short-term and long-term — and develop a plan that will determine if those goals have been met.

8. Act and Assess: Educators monitor how the plan is working, and then make adjustments to make improvements. The process then returns to Step 3, in which data is gathered for analysis, and a new cycle of review begins.

Read more: http://www.gse.harvard.edu/news-impact/2012/01/the-data-wise-process/#ixzz1zO9gK9Vp