

**GEORGE MASON UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT
EDUCATIONAL PSYCHOLOGY PROGRAM**

**EDEP593, Section 602: Data-Driven Decision-Making:
Analysis and Interpretation of Assessment Data
(3 credits)
Fall 2013**

**September 26, 2013-December 19, 2013
Thursdays, 5:30-9:15 p.m.
Kelly Building, Room 3011
Prince William County**

In partial fulfillment of requirements leading to the Certificate in Data-Driven Decision-Making

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COURSE DESCRIPTION:

This course focuses on the development of knowledge and skills related to analyzing and interpreting educational assessment data and other educational data to draw valid inferences about student performance. The course emphasizes how to mine existing data, use various data analytic strategies, interpret multiple kinds of assessment and other data, and how to make instructional decisions based on the data analysis.

LEARNER OUTCOMES:

This course forms a foundation for educators to focus on analyzing and interpreting educational assessment data to make decisions in the context of current school reform initiatives (and policies) at the federal, state and local levels. Students should have deep knowledge of potential data sources and existing data in their districts or through their jobs.

As a result of this course, the educators will be able to:

- Understand the components of data-driven decision-making
- Understand and explain the differences between the conceptual frameworks underlying classroom and system level assessment data and what constitutes a valid inference from different levels and kinds of data

- Understand the connections between the data and how to interpret, explain, and use classroom, school, or system level data to make changes to teaching and or educational programs
- Relate the concepts of reliability and validity of assessment data to inferences drawn from the data and the use of appropriate analyses
- Identify and report on formative and summative assessments in published research (such as articles, monographs, reports, etc.)
- Use various data analysis techniques that are appropriate for the desired inferences and the available data
- Analyze assessment data using appropriate computer programs (e.g., EXCEL).
- Make data-driven decisions related to multiple education topics, such as instructional strategies, grading practices, or student affective constructs.
- Disaggregate data to draw conclusions about sub-populations to determine how best to serve various student needs
- Explain critical issues related to the role of the analysis and interpretation of assessment data as related to social justice, collaboration, ethical leadership, innovation, and research-based practice.

PROFESSIONAL STANDARDS:

The goal of the course is to facilitate each educator's reaching a high level of competence and professional-level understanding of how to analyze and interpret educational assessment data. Learner outcomes are consistent with the Educational Psychology Program standards. The standards, as expressed as learner outcomes for assessment for data-driven decision making, are:

- Candidates will demonstrate an understanding of the basic concepts, principles, techniques, approaches, and ethical issues involved in analysis and interpretation of educational assessment data.
- Candidates will use their knowledge of quantitative and qualitative research methodology to analyze educational assessments for continuous improvement of student learning.
- Candidates will use their knowledge of data-driven decision-making to critically read and evaluate educational assessments, assessment data, and readings about assessment data use and interpretation.
- Candidates will use their knowledge of educational assessment for a data analysis and interpretive project.
- Candidates will demonstrate critical thinking, oral presentation, technological, and writing skills as they are used in the profession. Communication and dissemination skills may include the following:
 - Knowledge and use of APA style
 - Oral presentations
 - Poster presentations
 - Article abstracts

- Literature reviews
- Technological skills (including library/reference skills, interactive display skills, data analysis skills)

Student Outcomes and Relationship to Professional Standards

The student outcomes are informed by the Standards for Teacher Competence in Educational Assessment of Students (AFT, NCME, NEA, 1990), the Standards for Competence in Student Assessment (AASA, NAESP, NASSP, NCME, 1990), the Standards for Educational and Psychological Testing (AERA, NCME, & APA, 1999), and the InTASC Model Core Teaching Standards (CCSSO, 2011) guide the course content and emphasis for reaching the learning objectives.

Those standards deemed most relevant to addressing the learning targets for the course are those that state that *educators will have the knowledge, skills and dispositions to:*

1. Apply basic principles of sound assessment practices for addressing specific educational needs
2. Select assessment methods appropriate for instructional decisions
3. Recognize the implications of educational assessments for social justice in schools
4. Discern critical issues related to the role of the design of assessments for school accountability and high stakes testing
5. Gather evidence from multiple sources of data to draw valid inferences about student learning
6. The teacher understands and uses multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making

REQUIRED TEXTS:

Mandinach, E. B., & Jackson, S. S. (2012). *Transforming teaching and learning through data driven decision making*. Thousand Oaks, CA: Corwin.

Mertler, C. A. (2007). *Interpreting standardized test scores*. Los Angeles, CA: Sage.

RECOMMENDED TEXTS:

American Psychological Association. (2009). *Publication manual of the American Psychological Association*. (6th Ed.). Washington, DC: Author.

WEBSITE RESOURCES:

Students may find the following websites helpful:

Buros Center for Testing, including the Mental Measurements Yearbook,

<http://www.unl.edu/buros/>

National Center for Education Statistics, <http://nces.ed.gov>

National Research Center on Evaluation, Standards, and Student Testing (CRESST),

<http://www.cse.ucla.edu/>

Virginia Department of Education, <http://www.doe.virginia.gov/testing/index.shtml>

Wisconsin Center for Education Research, <http://www.wcer.wisc.edu/> <http://www.wcer.wisc.edu/>

COURSE ASSIGNMENTS

1. Assignment Descriptions

a. Attendance and Participation (15 points) DUE: Ongoing

Because active participation and engagement are imperative for optimal learning, preparation for and participation in class activities will be evaluated based on the following criteria:

- Students attend class, arrive on time, and stay for the entire class period.
- Students complete readings and prepare for class activities prior to class as is evidenced by their ability to discuss and write about the concepts presented and examined in the texts as well as participate fully in related activities.
- Students are actively involved in in-class and online learning experiences as is evidenced by (1) participating in all activities, (2) engaging in small and large group discussions, (3) using laptops and other electronic devices only to support discussion and learning and not for non-academic uses during class time, (4) completing written work related to the activities, and (5) supporting the participation and learning of classmates.
- Students show evidence of critical reflective thinking through in-class and online discussions, activities, and written reflections. *Note:* To determine whether the campus is closed due to inclement weather, call 703-993-1000 or go to www.gmu.edu.

b. In Class Activities (10 points) DUE: Ongoing

In class activities will be assigned throughout the semester in the form of data analyses, readings, reflections, and writings designed to support the production of final assignments.

c. Literature Review Preparation (15 points total) DUE: Ongoing

Students will read research articles on a topic of interest related to Data-Driven Decision-Making. They will analyze and critique the research and work toward a sense of the type and quantity of research needed to support changes in educational settings. Aspects of this project include:

Review at least 5 peer-reviewed, research articles. Include documentation of children and families studied, methodologies employed, questions asked, and findings. Information can be put in a chart or as a narrative.

Write a brief critical review of the articles studied and propose whether they support any needed change in early childhood education practice.

Propose additional research related to this topic based on the review

*Steps 1 through 3 listed below account for the 15 point total for the literature review preparation.

Step 1: Reference list (5 points) DUE: 10/10

Students will submit a list of at least **5** references due via online submission through Blackboard. These references should be from a peer-reviewed academic journal. Additional, but not required sources can be from edited volumes, government reports, and credible web references (only .org, .gov, and .edu sites will be accepted). The reference list should be in proper APA format. Please refer to APA handout and activity for information on formatting this assignment.

Step 2: Sentence outline (5 points) DUE: 10/17

Students will submit a sentence outline for the final paper. This outline should provide the topic sentences for each paragraph in the final paper. The student will receive feedback on the outline to complete the literature review draft. Students will include a synthesis graphic with the outline.

Step 3: Literature Review Draft (5 points) DUE: 10/29

Students will submit a literature review draft to receive feedback from the instructor. The Literature Review should be 4-5 pages.

Method Section Preparation (10 points total) DUE: 11/07

Students will develop a method section including the components of a) participants and setting, b) research design c) methods, and d) validity concerns.

Step 1: Participants and Setting/Research Design (5 points) DUE: 11/07

Students will submit a draft of the participants and setting section as well as the overall research design for instructor feedback.

Step 2: Methods, Data Analyses (5 points) DUE: 11/07

Students will submit a draft of the Method Section for instructor feedback. The Method Section should be approximately 3 pages.

d. Results (5 points) DUE: 11/21

Students will create data tables to display their results. Students will write narratives to correspond with tables for instructor feedback. The results section should be approximately 3 pages.

e. Conclusion (5 points) DUE: 12/05

Students will summarize the findings from the results section, indicate limitations in the study, and describe implications for instructional practice. The conclusion section should be approximately 3 pages.

f. Oral Presentation DUE (5 points) DUE: 12/12

Participate in an in-class sharing of findings from literature review, method section, results, and conclusion to receive feedback from the instructor and peers to prepare final paper.

g. Data Analysis and Interpretation Project (35 points) DUE: 12/19

2. Assignment and Examination Weighting

Criteria for evaluation

There are 100 total points for the course, distributed among class attendance and participation (15%), and in class/homework assignments related to data analyses (10%), the steps in the research process (35%), the data analysis project and presentation (35%), and the presentation (5%).

3. Grading Policies

A = 93-100%

A- = 90-92%

B+ = 88-89%

B = 80-87%

C = 70-79%

F = Below 70%

4. Course Expectations

Written Assignments

All written assignments prepared outside of class will be evaluated for content and presentation. The American Psychological Association, Sixth Edition (APA) style will be followed for all written work.

Students will do the following:

1. Present ideas in a clear, concise, and organized manner.
2. Develop points coherently, definitively, and thoroughly.
3. Refer to appropriate authorities, studies, and examples to document where appropriate.
4. Use correct capitalization, punctuation, spelling, and grammar.

5. Performance Based Assessment

All students will complete a performance based assessments, Data Analysis and Interpretation Project. The rubric for this assessment appears at the end of this syllabus.

TASKSTREAM REQUIREMENTS

Every student registered for any Data Driven Decision Making course (EDEP593) with a required performance-based assessment is required to submit this assessment, the Data Analysis and Interpretation Project, to TaskStream (regardless of whether a course is an elective, a onetime course or part of an undergraduate minor.) Evaluation of your performance-based assessment will

also be provided using TaskStream. Failure to submit the assessment to TaskStream will result in the course instructor reporting the course grade as Incomplete (IN). Unless this grade is changed upon completion of the required TaskStream submission, the IN will convert to an F nine weeks into the following semester

GMU POLICIES AND RESOURCES FOR STUDENTS

a. Students must adhere to the guidelines of the George Mason University Honor Code [See <http://oai.gmu.edu/honor-code/>].

b. Students must follow the university policy for Responsible Use of Computing [See <http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/>].

c. Students are responsible for the content of university communications sent to their George Mason University email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account.

d. The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance [See <http://caps.gmu.edu/>].

e. Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform their instructor, in writing, at the beginning of the semester [See <http://ods.gmu.edu/>].

f. Students must follow the university policy stating that all sound emitting devices shall be turned off during class unless otherwise authorized by the instructor.

g. The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing [See <http://writingcenter.gmu.edu/>].

PROFESSIONAL DISPOSITIONS

Students are expected to exhibit professional behaviors and dispositions at all times.

CORE VALUES COMMITMENT

The College of Education & Human Development is committed to collaboration, ethical leadership, innovation, research-based practice, and social justice. Students are expected to adhere to these principles. <http://cehd.gmu.edu/values/>

PROPOSED CLASS SCHEDULE:

Date	Topics/Learning Experiences	Readings and Assignments M = Mertler MJ = Mandinach and Jackson
Data-Driven Decision-Making		
Session 1 Sept. 26	<ul style="list-style-type: none"> • Data-Driven-Decision-Making: Transforming Teaching and Learning • A Structured Approach to Leading School Improvement • Components of Action Research • Overview of Literature Review Process 	In Class Discussion: MJ-In Class, Chapters 1 & 2
Session 2 Oct. 3	<ul style="list-style-type: none"> • The Importance of Measuring Achievement • Ethics and Social Justice • Literature Review Reference List 	Readings: M-Modules 1, 2
Assessments		
Session 3 Oct. 10	<ul style="list-style-type: none"> • Validity and Reliability • Analyzing Action Research • Literature Review Outlines 	Assignment: Literature Review Step 1: Reference List Due In Class Discussion: MJ-Chapters 3 & 4

Session 4 Oct. 17	<ul style="list-style-type: none"> • Types of Classroom Assessments • Types of Standardized Tests • Other Measures 	Assignment: Literature Review Step 2: Outline Due In Class Discussion: M-Modules 5, 6
Session 5 Oct. 24	<ul style="list-style-type: none"> • Standardized Tests in More Depth • Item Analysis and Test Score Analysis: Using Student Responses to Improve Assessments • Writing Literature Reviews 	Reading: M-Module 6
Measurement Issues		
Session 6 Oct. 31 Online Session	<ul style="list-style-type: none"> • Measurement Trends • Components of Method Section 	Assignment: Literature Review Step 3: Draft Due-10/29 In Class Discussion: MJ-Chapters 5 & 6
Data Analysis and Reporting		
Session 7 Nov. 7	<ul style="list-style-type: none"> • Basic Statistical Concepts and Data Analysis • Discussion of Methods and Data Analyses 	Assignment: Method Section Due
Session 8 Nov. 14	<ul style="list-style-type: none"> • Interpretation • Reporting 	In Class Discussion: M-Module 4
Session 9 Nov. 21	<ul style="list-style-type: none"> • Interpretation and Reporting in More Detail • Discussion of Oral Presentations 	Assignment: Results Section Due
Thanksgiving Break		
Session 10 Dec. 5	<ul style="list-style-type: none"> • Grading and Reporting • Results and Conclusion 	Assignment: Conclusion Section Due In Class Discussion: MJ-Chapter 7
Session 11 Dec. 12	<ul style="list-style-type: none"> • Oral Presentations • Peer Critiques of Results and Conclusion 	Assignment: Oral Presentation Due In Class Discussion: MJ-Chapter 8
Session 12 Dec. 19	<ul style="list-style-type: none"> • Final Paper Consultations 	Assignment: Data Analysis and Interpretation Project Due

DATA ANALYSIS AND INTERPRETATION PROJECT RUBRIC

Criteria	Outstanding (4)	Competent (3)	Minimal (2)	Unsatisfactory (1)
Literature Review	The study problem is relevant to the area of educational research and is described in a parsimonious, yet complete, manner. The literature review completely, clearly, and cohesively addresses the purpose of the study, includes only relevant theory and research and leads to the research questions.	The study problem is relevant to the area of educational research. The problem and literature review are overall well described, but there may be minor issues with clarity, extraneous text, or lacking information.	The study problem is relevant to the area of educational research, but does not clearly or completely address purpose of the study. The literature review includes information about the topic, but is missing significant information, is unclear, or includes extraneous text.	The study problem is not quite relevant to the area of educational research, insufficiently described, The literature review does not support the purpose of the study, lacks cohesion, or is unclear. Or, it is too brief to completely communicate information about the study.
Methods	Data capture and analysis is easily executable, clear, complete, and appropriate. The description of all steps to be taken is clear and complete and includes relevant resources. The methods and sample are appropriate to the research questions.	Data capture and analysis has minor issues related to execution, clarity, missing details, or appropriateness. The description of most of the steps to be taken is clear. There may be minor issues details or a step missing within the description. Relevant resources may be incomplete. The methods or sample may contain minor errors.	Data capture and analysis appears to be executable, however more than one step is missing, steps are unclear, and details are missing. One or more components may not be implemented appropriately, or the data analysis may not be appropriate. The description has a major issue related to clarity or missing steps. One or two resources may not be relevant or may be incomplete. The methods	Data analysis and capture does not appear to be executable. Multiple steps are missing, unclear, or lacking details. More than one step in the data capture or analysis plan is incorrect or inappropriate. The description has multiple issues with clarity and/or many steps are missing. Most of the resources are not relevant, or resources are missing. Methods or samples may be missing or contain multiple

Criteria	Outstanding (4)	Competent (3)	Minimal (2)	Unsatisfactory (1)
			and sample contain errors.	errors.
Results	Clear, accurate, and complete presentation of relevant results by project research questions. The tables and/or figures include all necessary information.	Accurate presentation of relevant results by project research questions, with some minor errors in clarity or completeness. There are minor errors in the tables and/or figures, such as tables are missing minor pieces of necessary information, an extraneous table is included, or a table/figure is missing.	Results are presented by research questions, but some results are irrelevant and/or there are significant problems with clarity, accuracy, or completeness. The tables and/or figures do not include all necessary information, or there may be more than one missing or extra table/figure.	The presentation of the results is not organized by research questions, some results are irrelevant, and there are serious problems with clarity, accuracy, and completeness. The tables and/or figures are missing much information or are unclear. There are multiple tables/figures missing, or too many tables/figures are included.
Discussion and Conclusion	The discussion and conclusion is complete, clear, cohesive, and significantly addresses the impact and implications of the study. Additional research aptly supports the argument.	The discussion and conclusion has minor issues in completeness, clarity, or cohesiveness. This section may not address all of the most salient points, or include minor distractions. One of the additional citations may not support the conclusions, or may distract from the argument.	The discussion and conclusion has multiple issues in completeness, clarity, or cohesiveness. This section makes some of the important points, misses others, or includes irrelevant points. More than one citation does not support the conclusions, or may be missing.	The discussion and conclusion is not organized and does not appear to be related to the study. This section is incomplete, missing, or irrelevant. Multiple citations are missing, or those that are included do not support the conclusions.

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Criteria	Outstanding (4)	Competent (3)	Minimal (2)	Unsatisfactory (1)
APA Style <i>Use APA writing style, including citations within text and references.</i>	Writing is concise, coherent, well-organized, and with correct APA style. Citations and references are correct and complete.	Writing lacks some clarity or has minor organizational problems affecting the overall coherence, and/or there are some errors in APA style, table/figures, citations, or references. There may also be a small number of missing citations or references.	Writing has multiple problems with clarity, coherence, and organization. There are many errors in APA style, tables/figures, citations, and/or references. Multiple references are missing or incomplete.	Writing lacks clarity, coherence, many errors, and/or no use of APA style. Tables/Figures, citations and/or references are minimal or absent.