GEORGE MASON UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT
DIVISION of EDUCATIONAL PSYCHOLOGY, RESEARCH METHODS
AND EDUCATION POLICY

EDEP 591
Data-Driven Decision-Making for Educational Continuous Improvement
For Fairfax County Public Schools Cohort 1

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

Credits: 3

Semester & Year: Fall 2012

Dates: From September 19, 2012 to December 5, 2012

Meeting Time/Days: Wednesday, 4:30 p.m. to 8:45 p.m.

Location: Frost Middle School, Room 209

PROFESSOR(S): Lori C. Bland, Ph.D.

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CATALOG COURSE DESCRIPTION: Provides an intellectual and practical framework for creating and understanding formative and summative assessments of student performance. Emphasis is placed on the learning principles, cognitive processes, and psychometric models as they pertain to assessment issues.

NATURE OF COURSE DELIVERY:

A variety of learning approaches will be used to engage students in classroom learning, including lecture, whole and small group discussion, group interactive assignments, and individual assignments. The primary mode will be problem-based learning. Class participants will identify specific areas of learner need within their job position or interest area. Problem-selection will focus on the inferences the class participants would like to make about learning. Class participants will develop assessments focused on the identified needs. Class participants will have the opportunity to work in groups or individually to complete in-class and homework

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assignments. Mini-lectures will generally open each instructional period to set the focus for the class session. While the mini-lectures are relevant to specific chapters in the required textbooks and the additional readings, they are not taken exclusively from this source. The final segment of the class period will be devoted to small group discussions of the current literature on educational assessment or small group or individual work sessions designed to provide hands-on experiences with assessment methods and data-driven decision-making.

LEARNER OUTCOMES:

This course forms a foundation for the following three courses in the sequence. As such, it will inform educators of the importance and role of data-driven decision-making (3DM) in the context of current school reform initiatives (and policies) at the federal, state and local levels. This course provides an overview of the theoretical, intellectual and practical framework for:

- understanding learning
- teaching to engage cognition
- how to assess student learning and changes in affect
- using formative and summative assessments of student performance
- how to interpret assessment data
- how to make instructional decisions based on the data analysis

Emphasis is placed on the learning principles, cognitive processes, and psychometric models as they pertain to instructional and assessment issues. Students should have a working knowledge of potential data sources and existing data from classrooms, schools, or at the district level.

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

- Understand how data-driven decision-making is implied or made explicit in federal statutes and state assessment programs, particularly for the state where employed.
- 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 and explain how data from these multiple frameworks are applied to inform decision making about learning and teaching.
- Understand and explain the cognitive bases for learning and their connections to various forms of assessments of learning.
- Analyze learning artifacts (e.g., lesson plans, assessment reports) in terms of its cognitive demands and determine an appropriate assessment of the expectations for students.
- Apply taxonomies (such as Bloom) to teaching and assessment of student progress.
- Design classroom-based tests that meet standards for sound assessment and testing.
- Explain the range of testing issues that educators confront and describe sound ways to handle those issues effectively.
- Discern critical issues related to the role of DDDM in public school accountability and high stakes testing including issues related to the CEHD core values of ***social justice, innovation, collaboration, ethical leadership and research-based practice***.

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PROFESSIONAL STANDARDS

The goal of the course is to facilitate each educator's reaching a level high of competence and professional-level understanding of assessment design practices used in making decisions related to continuous improvement in student learning. 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:

- Educators will demonstrate an understanding of principles and theories of learning, cognition, motivation, and development as they apply to a wide variety of contemporary assessment contexts.
- Educators will use their knowledge, skills, and dispositions to apply principles and theories of learning, cognition, motivation, and development to analyze and develop instruction based on sound assessment principles.
- Educators will demonstrate an understanding of the basic concepts, principles, techniques, approaches, and ethical issues involved in educational assessment.

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, skill and disposition to:*

1. Apply basic principles of sound assessment practices for addressing specific educational needs
2. Select assessment methods appropriate for instructional decisions
3. Develop assessment methods appropriate for instructional decisions
4. Recognize the implications of educational assessments for social justice in schools.
5. Discern critical issues related to the role of the design of assessments for school accountability and high stakes testing.
6. Gather evidence from multiple sources of data to draw valid inferences about student learning.
7. 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:

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001*). A taxonomy for learning, teaching and assessing: A revision of Bloom's Taxonomy of educational objectives.* New York : Longman.

National Research Council. (2005). *How Students Learn: History, Mathematics, and Science in the Classroom.* Washington, DC: National Academies Press. Available from: http://www.nap.edu/catalog.php?record_id=10126

Popham, W. J. (2003). *Test Better, Teach Better: The Instructional Role of Assessment.* Alexandria VA: ASCD.

In class selected readings related to learning, cognition and assessment, will be distributed by the instructor.

The following additional readings will be assigned and can be found on Blackboard or will be distributed by the instructor:

Baker, E. (2010). What probably works in alternative assessment. Los Angeles: National Center for Research on Evaluation, Standards, and Student Testing. CRESST Report 772. Requested January 2, 2011.

Department of Education. (April 28, 2011). Board of Education Agenda Item. Department of Education. Virginia Government. Retrieved from http://www.doe.virginia.gov/boe/meetings/2011/04_apr/agenda_items/item_l.pdf

Introduction to Webb's Depth of Knowledge levels. Mathematics Depth of Knowledge Levels. Retrieved from: http://jc-schools.net/dynamic/math/webbs-depth.pdf

Kukic, S.J. (2009). Let's get serious together. *Using a multi-tiered system of support to achieve outcomes for all students. Voyager learning.com Retrieved from* http://www.doe.virginia.gov/instruction/response_intervention/training/cohort/2010/december/lets_get_serious.pdf

Mandinach, E. B., Honey M., & Light, D. (2006). A theoretical framework for data-driven decision making," EDC Center for Children and Technology, paper presented at the Annual Meeting of the American Educational Researchers Association (AERA), San Francisco, CA.

Marsh J. A., Pane, J., and Hamilton, L. S.(2006). *Making Sense of Data-Driven Decision Making in Education Evidence from Recent RAND Research. Rand Education. Occasional Paper. Retrieved March 11, 2011 from* http://www.rand.org/pubs/occasional_papers/2006/RAND_OP170.pdf

McDonald, S., Andal, J., Brown, K., and Schneider, B. (2007). *Getting the evidence for evidence based initiatives: how the Midwest states use data systems to improve education processes and outcomes.* Washington, DC: Institute of Education Sciences. U. S. Department of Education. REL2007-016. Retrieved March 11, 2011, from http://ies.ed.gov/ncee/edlabs/regions/midwest/pdf/REL_2007016.pdf

Means, B., Chen, E., DeBarger, A., Padilla, C. Christine Padilla. (2011).*Teachers' Ability to Use Data to Inform Instruction: Challenges and Supports*. Washington, D.C.: U.S. Department of Education. Office of Planning, Evaluation and Policy Development.

Mid-Continent Regional Education Laboratory. (2003*). Sustaining school improvement. Data-Driven Decision Making*. McREL. Retrieved March 15, 2011, from www.mcrel.org

Mid-Continent Regional Education Laboratory. (2005). How are educators using data? A comparative analysis of superintendent, principal, and teachers' perceptions of accountability systems. McREL. Retrieved June 1, 2012, from www.mcrel.org

National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform.* Washington, DC: Government Printing Office.

Perie, M., Marion, S., & Gong, B. (2009). *Moving toward a comprehensive assessment system: A framework for considering interim assessments*. Educational Measurement: Issues and Practices, 28, 5-13.

Popham, W. J. (1987). "The Merits of Measurement-Driven Instruction," *Phi Delta Kappan*, Vol. 68, 1987, pp. 679–82.

Shepherd, L. A. (1988, April). *Should instruction be measurement driven?: A debate.* Paper presented at the Annual Meeting of the American Educational Research Association. New Orleans, LA.

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/

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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 REQUIREMENTS, PERFORMANCE-BASED ASSESSMENT, AND EVALUATION CRITERIA:

- Read background and framing materials related to learning and assessment.
- Read assigned readings before each class.
- Participate in classroom discussions and group activities.
- Attend all class sessions on time. [If an emergency prevents you from attending class, please call or e-mail the instructor in advance.]
- Submit an existing unit-level lesson plan with annotations and analyses of the cognitive demands on the student.
- Create an edited unit-level lesson plan that conforms to principles of learning based on at least one key perspective (e.g., Krathwohl, Bloom)
- Submit a proposed long-term teaching and testing program that illustrates key components of learning and assessment as covered in Popham's *Test Better, Teach Better: The Instructional Role of Assessment*.

A. Requirements

Students are expected to:
- Use your GMU e-mail account for all correspondence with the instructor.
- Attend all class sessions. Because class participation is a factor in grading, absences, tardiness, or early departure will be used as de facto evidence of nonparticipation. [If an emergency prevents you from attending class, please call or e-mail the instructor in advance preferably, but as soon as possible.]
- Be on time for class.
- Remain in class until class is dismissed by the instructor.
- Attend to and participate meaningfully in class lectures, discussions, individual assignments, and group activities. Responding to phone calls, texting, checking e-mails, Twitter, Facebook, or other electronic communication modes should not occur during class time.
- Submit a paper copy of all assignments to the instructor at the beginning of class on the due date. You must also e-mail the instructor a copy of the assignment using your GMU e-mail account before class begins on the due date. **Any assignments turned in or e-mailed after class starts will be considered late.**
- Submit all individual and group assignments and assessments on time. **I will deduct 5% of the total grade for every day the assignment is late without a documented emergency situation. If you have a medical issue that prevents**

you from attending class or completing assignments on-time, please work with the Office of Disability Services.

- Students will have the opportunity to fix and re-submit assignments one time. All resubmits are due 1 week after the assignment was returned in class.
- Use the APA Manual as a guide for written assignments (B2-5), cite readings and program evaluation or other content literature within the body of the text, and complete a reference list at the end of the assignment according to the *Publication Manual of the American Psychological Association, 6th Edition* (APA, 2009) for all assignments.

B. Performance-based assessments

1. **Class participation (20 points).** Because of the importance of lecture and class discussions to students' learning experience, I expect each student to come to class on time and participate in class discussions. Additionally, assigned readings are to be completed before class. Attendance, punctuality, preparation, and active contribution to small and large group activities are essential. All in class assignments are to be completed by the end of class, or by the start of the next class period. These elements of behavior reflect the professional attitude implied in the course goals.

2. **Analysis of an Existing Unit-level Lesson Plan (30 points).** Each educator will analyze an existing lesson plan (preferably one that the educator already has in use) according to the cognitive demands for the learner and a tentative proposal of how the learner's knowledge can be assessed, using concepts covered in the course.

3. **Revised and Annotated Lesson Plan (40 points, selected PBA).** Based on the previous assignment, the educator will revise (where appropriate) that assignment and annotate the lesson plan based on principles of learning from at least one key perspective discussed in class (e.g., Krathwohl, Bloom, and modeled after the analysis from the Anderson and Krathwohl text book).

4. **Long-term Teaching Unit and Assessment Plan (40 points).** Each educator will create and submit plans for a long-term teaching and assessment program that illustrates key components of learning and assessment as covered in Popham's *Test Better, Teach Better: The Instructional Role of Assessment* and other readings assigned during the course. This assignment is designed to allow for application of the full range of concepts and principles covered in the course.

5. **Reflective, Research Paper on a Topic of Student Interest Related to Assessing Affect (20 points).** Class participants will prepare a brief research paper an area of interest related to affect and how to assess it in an area that is perceived to be in need of improvement. The paper will describe the nature of the problem and reflections related to underlying causal factors. In addition, the paper will briefly analyze and discuss the research related to the interest area and underlying construct, as well as, research about

how this area is assessed, including a discussion of available instruments. The paper should be 6-10 pages in length. This paper should focus on an affective issue that you would like to resolve.

6. **Take-home examination (50 points).** Students will complete an examination. The examination will include several questions, including an analysis of a practical situation to which students will apply the concepts discussed in class during the first half of the course. This take-home examination will focus on principles of learning, teaching, assessment of learning, and data-driven decision making of learning and questions that require the student to recognize and apply key concepts and principles. The examination will also require that students reflect on their learning in the class.

C. Criteria for evaluation

A total of 200 points can be earned for the course, distributed across class participation and attendance expectations, assignments, and the examination.

D. Grading scale

Grade Earned	Points Earned
A+	195-200 points
A	190-194 points
A -	184-189 points
B+	178-183 points
B	172-177 points
B-	166-171 points
C	140-165 points
F	139 or fewer points

COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT

Student Expectations

- Students must adhere to the guidelines of the George Mason University Honor Code [See http://academicintegrity.gmu.edu/honorcode/].

- 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/].

- Students must follow the university policy for Responsible Use of Computing [See http://universitypolicy.gmu.edu/1301gen.html].

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- 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.

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

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

Campus Resources

- 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/].

- 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/].

- For additional information on the College of Education and Human Development, Graduate School of Education, please visit our website [See http://gse.gmu.edu/].

CLASS SCHEDULE

Session	Date	Topic/Learning Experiences	Readings and Assignments* *BB=Reading on blackboard *C: Reading dist. in class
1	9/19/12	Foundational Issues Pertaining to School Improvement Initiatives Foundations for Assessment	BB: A Nation at Risk (1983) BB: Perie (2009). BB: Popham (1987). BB: Shepherd (1988).
2	9/26/12	Relationships: Standards, Learning, Teaching, Assessment, Decision-Making, and Performance Cognitive Dimensions of Assessment Standards-Based Tests Webb's Depth of Knowledge	BB: Mandinach (2006). BB: McREL (2003). BB: VDOE Teacher Performance Standards VDOE Standards of Learning: 1 Grade Level, 1 Subject Area BB: Introduction to Webb's DOK
3	10/3	What is Learning? Cognitive Processes in Learning How Students Learn	NRC (2005): Chapter 1; Part I, II, **or** III; Chapter 13
4	10/10	Taxonomies and Classification Systems (Bloom, Krathwohl)	Anderson & Krathwohl (2001). Section 1, 2, and Appendices.
5	10/17	Analyzing Instruction and Assessment for Learning	Anderson & Krathwohl (2001). Section 3. **Analysis of Existing Lesson Plan Due**
6	10/24	The Link Between Testing and Teaching How Tests Can Clarify the Curriculum	TBTB Chapters 1 and 2 **Revised and Annotated Lesson Plan Due**
7	10/31	Testing Assessment and Learning Validity, Reliability, and Bias Teaching and Test Building	TBTB Chapters 3, 4, 5, 6, 7; BB: Baker (2010).
8	11/7	Beyond Cognitive Assessment: The Value of Affective Assessment	TBTB Chapter 8 **Long-Term Teaching Plan Due**
9	11/14	Uses and Misuses of Standardized Tests Collecting Credible Classroom Evidence	**Affective Research and Reflective Paper Due** TBTB C. 9, 10, 11
	11/21	NO CLASS	THANKSGIVING HOLIDAY
10	11/28	Synthesizing Learning, Cognition and Assessment Principles Connecting Learning and Assessment to National and State Standards DDDM for Continuous Improvement	BB: Means (2011). BB: Kukic (2009). Let's get serious. BB: McREL (2005). BB: McDonald (2007). **Exam Distributed**
	12/5	No Class: Turn in Exam Electronically by Midnight on 12/5/12	**Exam Due**

Sample Rubrics:
Attendance & Participation

Student participation is imperative to student learning and a successful class. The following rubric outlines how student participation scores will be determined in this course. All students are expected to demonstrate specific characteristics and actions throughout the semester. The quality and quantity of these actions will determine the points assigned for participation.

Students are expected to:

a) Be punctual, present (in mind and body), and well prepared for class.
b) Participate fully in class activities and assignments – take an active part in small and large group discussions (without dominating the conversations) and pay attention to class lectures.
c) Make insightful comments, which are informed by required readings and demonstrate reflection on those readings. Specifically, students should come to class with questions, comments, and thoughts on the current readings.
d) Treat class activities, group discussions, and class discussions as important components of the course, showing respect for fellow classmates and the course material.
e) Complete individual and group class activities within the time allotted, ensuring full participation of all group members. Submit class activities to the instructor at the end of class.

Each of the 5 criteria will be assessed on a 4-point scale.

4 = Student *consistently* demonstrated the criterion throughout the semester.
3 = Student *frequently* demonstrated the criterion throughout the semester.
2 = Student *intermittently* demonstrated the criterion throughout the semester.
1 = Student *rarely* demonstrated the criterion throughout the semester.
0 = Student *did not* demonstrate the criterion throughout the semester.

The participation grade will be calculated as the sum of points for each criterion.

Annotated Lesson Plan Rubric

Criteria	Outstanding (4)	Competent (3)	Minimal (2)	Unsatisfactory (1)
Instructional Elements *Identify key instructional elements of the lesson plan and describe them.*	Description is complete and includes all required key instructional elements. The plan is clear, and no extraneous text is included. Use of the key instructional elements is appropriate, with no misunderstandings or misapplications.	Description is mostly complete, but lacks one key instructional element or minor parts of more than one element. There may be minor issues with clarity or extraneous text. There may be minor misunderstandings or misapplications of the instructional elements.	Description is incomplete, lacking more than one key instructional element or parts of more than one element. The plan has several issues with clarity and/or extraneous text. There are multiple misunderstandings or misapplications of the instructional elements.	Description is too brief to completely communicate the instructional elements, or too many elements are missing, or incomplete. The plan is unclear. The instructional elements are incorrect in understanding or application.
Cognitive Processes *Identify student expectations in the lesson plan and describe key cognitive processes students use.*	Description gives a complete analysis of the lesson plan from a cognitive perspective, providing specific examples. The analysis is accurate, with no misunderstandings.	Description gives a mostly complete analysis of the lesson plan from a cognitive perspective. The examples may be incomplete, missing one or two, or are somewhat in accurate. The analysis may have minor inaccuracies or misunderstandings.	Description is limited, with few examples, or there may be many examples, but they are inaccurate. The analysis has several inaccuracies or misunderstandings.	Description of lesson plan is barely complete or lacks examples. The analysis is missing or inaccurate with major misunderstandings.
Analysis *Analyze primary elements of the lesson plan from the perspective of one*	Analysis is consistent with theory chosen and primary elements are related to that theory well.	Analysis is somewhat general, lacking key elements or in need of elaboration.	Analysis is general, lacking specific connections to the chosen theory.	Analysis provides few or no specifics related to the theory chosen and no examples.

approach discussed in class.			
APA Style *Use APA writing style, formatting, including citations within text and references.*	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, 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, citations, and/or references. Multiple references are missing or incomplete.	Writing lacks clarity, coherence, many errors, and/or no use of APA style. Citations and references are minimal or absent.