EDEP 591: D01 – Data-Driven Decision Making for Educational Continuous Improvement
3 Credits, Summer 2019

Faculty

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Prerequisites/Corequisites: None

University Catalog Course Description

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

Course Overview

The course will introduce students to current conceptualizations of pedagogical data literacy as it applies to individual, collaborative, and organizational practices. The emphasis is on developing an understanding of the skills needed for effective data use practice in relation to contextual factors that determine data use. These contextual factors include an institution's data use culture, collaboration, technology, and resources needed for effective data use. Content will cover connections to teaching and learning competencies in depth; current research findings on effective data use; history of the concept in relation to data-driven decision making and accountability frameworks; distinction between data literacy and assessment literacy; the definition of data literacy and its requisite skills, knowledge, and dispositions; models of data literacy (e.g., Data Wise, Data Teams, Using Data); trends in educational systems that impact data use (big data, data systems, intelligent tutor systems, data dashboards, web and mobile educational applications, other emerging technologies, etc.). Overview of ethical use of data, sources of data, and making instructional decisions based on data. Videos and case studies of authentic data use scenarios will be used to illustrate key concepts throughout the course.

Course Delivery Method

This course will be delivered online using an asynchronous format via Blackboard Learning Management system (LMS) housed in the MyMason portal. You will log in to the Blackboard (Bb)

course site using your Mason email name (everything before @masonlive.gmu.edu) and email password. The course site will be available on May 15, 2018.

Under no circumstances, may candidates/students participate in online class sessions (either by phone or Internet) while operating motor vehicles. Further, as expected in a face-to-face class meeting, such online participation requires undivided attention to course content and communication.

Technical Requirements

To participate in this course, students will need to satisfy the following technical requirements:

- High-speed Internet access with standard up-to-date browsers. To get a list of Blackboard's supported browsers see:
  https://help.blackboard.com/Learn/Student/Getting_Started/Browser_Support#supported-browsers

  To get a list of supported operation systems on different devices see:
  https://help.blackboard.com/Learn/Student/Getting_Started/Browser_Support#tested-devices-and-operating-systems

- Students must maintain consistent and reliable access to their GMU email and Blackboard, as these are the official methods of communication for this course.
- Students may be asked to create logins and passwords on supplemental websites and/or to download trial software to their computer or tablet as part of course requirements.
- The following software plug-ins for PCs and Macs, respectively, are available for free download: [Add or delete options, as desire.]
  - Adobe Acrobat Reader: https://get.adobe.com/reader/
  - Windows Media Player:
    https://support.microsoft.com/en-us/help/14209/get-windows-media-player
  - Apple Quick Time Player: www.apple.com/quicktime/download/

Expectations

- Course Week: Because asynchronous courses do not have a "fixed" meeting day, **our week will start on Monday, and finish on Sunday**.
- Log-in Frequency:
  Students must actively check the course Blackboard site and their GMU email for communications from the instructor, class discussions, and/or access to course materials at least 4 times per week.
- Participation:
  Students are expected to actively engage in all course activities throughout the semester, which includes viewing all course materials, completing course activities and assignments, and participating in course discussions and group interactions. Each week, you will read approximately 30 pages, complete online activities, work on assignments to be submitted through Blackboard, and take quizzes.

- Technical Competence:
  Students are expected to demonstrate competence in the use of all course technology. Students who are struggling with technical components of the course are expected to seek assistance from the instructor and/or College or University technical services.
- Technical Issues:
  Students should anticipate some technical difficulties during the semester and should, therefore, budget their time accordingly. Late work will not be accepted based on individual technical issues.
- Workload:
  Please be aware that this course is **not** self-paced. Students are expected to meet *specific deadlines* and *due dates* listed in the **Class Schedule** section of this syllabus. It is the student's responsibility to keep track of the weekly course schedule of topics, readings, activities and assignments due.
- Instructor Support:
  Students may schedule a one-on-one meeting to discuss course requirements, content or other course-related issues. Those unable to come to a Mason campus can meet with the instructor via telephone or web conference. Students should email the instructor to schedule a one-on-one session, including their preferred meeting method and suggested dates/times.
- Netiquette:
  The course environment is a collaborative space. Experience shows that even an innocent remark typed in the online environment can be misconstrued. Students must always re-read their responses carefully before posting them, so as others do not consider them as personal offenses. *Be positive in your approach with others and diplomatic in selecting your words*. Remember that you are not competing with classmates, but sharing information and learning from others. All faculty are similarly expected to be respectful in all communications.
- Accommodations:
  Online learners who require effective accommodations to insure accessibility must be registered with George Mason University Disability Services.

Course Logistics

Access to MyMason and Mason email are required to participate successfully in this course. Check the IT Support Center website. Please make sure to update your computer and prepare yourself to begin using the online format BEFORE the first day of class. Read the information under "Technical Requirements" above.

Though the delivery method is entirely online, it should take you the same amount of time as other 3-credit courses. You should **expect to spend an *average* of 8 to 10 hours on coursework for each class session** (this includes the time you would have spent in a classroom). Also, we have 2-3 sessions fewer because of the condensed time as compared to a semester.

Learner Outcomes or Objectives

This course forms a foundation for the data literacy certificate courses in the sequence. As such, it will inform educators of the importance and role of data-driven decision-making (DDDM) to improve teaching and learning.

Emphasis is placed on the learning principles, cognitive processes, and psychometric principles 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.
By the end of this **asynchronous online course** students will be able to:

- Identify how data-driven decision-making is implied or made explicit in federal statutes and state assessment programs, particularly for the state where employed.
- Explain the differences between the conceptual frameworks underlying classroom and system level assessment data.
- Explain how data from these multiple frameworks are applied to inform decision making about learning and teaching.
- 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 multiple learning hierarchies (e.g., Bloom, Krathwohl) 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 of social justice.

Professional Standards

Learner outcomes are consistent with the Educational Psychology Program standards. The standards, 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 data use.

Student Outcomes & Relationship to Professional Standards

The student outcomes for the certificate are informed by standards for what teachers should know and be able to do established by various organizations:
1. Standards for Teacher Competence in Educational Assessment of Students (1990)
2. Data Quality Campaign
3. Interstate New Teacher Assessment and Support Consortium (INTASC)
4. American Federation of Teachers

4. [The Five Core Propositions of the National Board for Professional Teaching Standards](#)

Required Texts

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

Supplementary Texts

Selected readings will be assigned for the course and made available on Blackboard.

Course Performance Evaluation

Students are expected to submit all assignments on time in the manner outlined by the instructor (e.g., Blackboard, Tk20, hard copy). Late assignments will not be accepted without prior instructor approval. An excused late submission will at best receive a grade of B (in points) for that assignment.

- **Class Participation (130 points, 13 class sessions)**. Students are expected to participate in online discussion boards in a meaningful way. Assigned readings are to be completed. Active contribution means you post in specified discussion boards and respond to classmates' posts meaningfully. Please review Netiquette in preparation for this class. Mini quizzes may be included in class participation and are usually aligned to assigned readings, videos, or other class materials.
- **Analysis of teaching-learning scenarios (30 points total, six assignments)**. Students will complete six scenarios/activities. Specific directions will be provided for each scenario. Students will use the DDDM framework and data use cycle to identify the problem, determine data sources, and propose a plan to assess students' knowledge.
- **Reflection Paper (40 points)**. Students will prepare a 4 page (double-spaced, 1 inch margins) reflection on the DDDM framework and how it relates to noncognitive skills/social emotional competencies. The paper will use appropriate research in the literature to develop a reflective essay addressing the following:
    - What is the role of socioemotional skills or competencies in your current field of study or learning context? (policy, expectations) What is your take on the teaching and assessment of noncognitive skills for your learning context?
    - Provide an overview of any one socioemotional skill that you want to learn more about: definition, association with academic and non-academic outcomes, an overview of available instruments, strengths/limitations AND facilitators/barriers related to assessing and using non-cognitive skills to inform teaching and learning.

- **Research Paper on Teaching and Assessment (50 points).** Each student will prepare a 7 -8 page (double-spaced, 1" margin) paper on DDDM in a learning context. The paper

provides an opportunity to apply the major concepts covered in the course. The paper should cover the following:

- **Nature of learning, teaching, assessment in your learning context/content area**
- **Major sources of data (assessment and other) in your learning context/ content area**
- **State of DDDM in your learning context/ content area**
- **A brief literature review of relevant empirical research (2 pages)**
- **A brief teaching and assessment plan focused on DDDM for continuous improvement**

Grading

There are 250 total points for the course distributed among the four assignments listed above.

Grading scale:
A+ = 245-250 points
A = 232-244 points
A- = 225-231 points
B+ = 220-224 points
B = 207-219 points
B- = 200-206 points
C = 175-199 points
F = 174 or fewer points

The grade of A is awarded for excellence, the best work in the class. An A student turns in all work on time with consistently very high standards of quality, effort, and creativity. This person produces outstanding products, shows excellent growth, and preforms exceptionally in presentations and critiques.

The grade of B is awarded to students who have turned in all work on time and consistently completed work of high quality. The work shows creative thinking, extra effort, and care in presentation. This person has demonstrated knowledge that surpasses the basic material and skills required by the course.

The grade of C is earned when all class work is turned in and the student has mastered the basic material and skills of the course. The person participated in class and demonstrated knowledge of the basic material and skills required by this course. This is the average grade in the class.

Professional Dispositions
See https://cehd.gmu.edu/students/polices-procedures/

Class Schedule

Note: Faculty reserves the right to alter the schedule as necessary, with notification to students.

MODULES	WEEKS	TOPICS	READINGS/MULTIMEDIA	ACTIVITES/ASSIGNMENTS DUE AND DUE DATES
Module 1 Foundations of Data Literacy	**5/20 – 5/26**	The Educational Context and DDDM	Video: Syllabus Review Module 1 Overview Readings: Rising above the Gathering Storm Executive Summary (2007) Mandinach & Jackson (2016) - Introduction & Chapter 1 Popham (1987) Bracey (1987)	Blackboard Discussion Board 1: Ice Breaker **Due: 5/26 11:59 pm**
	5/27 – 6/2	DDDM Frameworks and Data Literacy	Readings: Mandinach & Jackson (2016)- Chapter 2 Mandinach & Gummer (2016)	Blackboard Discussion Board 2: On Data Literacy Due date 1: 5/31 11:59 pm Due date 2: 6/3 11:59 pm Assignment : Teaching-Learning Scenario: Analysis of DDDM using concepts from the readings **Due: 6/2 11:59 pm**
Module 2: Teaching, Learning, and Assessment	**6/3 -6/9**	Nature of Learning & Instruction	Video: Module 2 Overview Part I Readings: How People Learn II Chapter 2 and Chapter 7 + **one of the following**: NRC Chapter 2: History NRC HPL II Chapter 5: Mathematics NRC HPL III Chapter 9: Science Loewen & Sato (2017) Chapter 12, 14, 15, 16, **OR** 17	Blackboard Discussion Board 3: Understanding Learning Objectives Assignment : Concept Mapping with Popplet **Due: 6/9 11:59 pm**
	6/10 – 6/16	Taxonomies and	Readings:	Blackboard Discussion Board 4: On Taxonomies

		Classification Systems	Hess et al (2009) Webb's DOK (2002) Alignment – Video Lecture	Assignment: Teaching and Learning Scenario **Due: 6/16 11:59 pm**
	6/17-6/23	Assessment's role in teaching and learning	Video: Module 2 Part II Overview Readings: Shepard (2000) Shepard & Penuel, 2018 Mandinach & Jackson Chapter 7	Blackboard Discussion Board 5: The role of assessments (collaborative group project) **Due: 6/23 11:59 pm**
	6/24 – 6/30	Assessment's role in teaching and learning Collecting Credible Classroom Evidence	Readings: Brookhart(2016) RTI Fundamentals (Kurtz, 2009)	Blackboard Discussion ~~Collaborative Group project continued~~ Assignment : Teaching and Learning Scenario Teaching and Assessment Paper CHECKPOINT **Due: 6/30 11:59 pm**
	712 – 7/7	Socioemotional Skills and Competencies NonTraditional Assessments	Video: Module 2 Overview III Readings: Performance Assessments AND one of the following: Rosen et al (2010) Kautz et al (2014) Farrington et al (2012) Recommended: HPL II Chapter 6	Blackboard Discussion Board 7: Performance assessments Mini-Quiz on Readings Assignment : Teaching and Learning Scenario **Due:7/7 11:59 pm**
	7/8 – 7/14	Engaging Students in the assessment process	Readings: Nicol & McFarlane-Dick (2006)	Blackboard Discussion Board 7: Involving Students

				Due: 7/14 11:59 pm
Module 3: DDDM in Context	7/15 – 7/21	Factors influencing DDDM: Data use Culture, Technology Ethical Use of Data in Education	Video: Module 3 Overview Readings: Mandinach & Jackson Chapter 3 and 6	Blackboard Discussion Board 8: Data Culture & Technology REFLECTION PAPER DUE Due: 7/21 11:59 pm
	7/21 – 7/26	Factors influencing DDDM	Readings: Mandinach & Jackson Chapter 8, Chapter 4	Blackboard Discussion Board 9: Wrap-up Teaching and Assessment Paper DUE Due: 7/26 11:59 pm

Core Values Commitment

The College of Education and 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/.

GMU Policies and Resources for Students

Policies

- Students must adhere to the guidelines of the Mason Honor Code (see https://catalog.gmu.edu/policies/honor-code-system/).

- Students must follow the university policy for Responsible Use of Computing (see http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/).

- Students are responsible for the content of university communications sent to their Mason 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 with disabilities who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor (see http://ods.gmu.edu/).

- Students must silence all sound emitting devices during class unless otherwise authorized by the instructor.

Campus Resources

- Support for submission of assignments to Tk20 should be directed to tk20help@gmu.edu or https://cehd.gmu.edu/aero/tk20. Questions or concerns regarding use of Blackboard should be directed to http://coursessupport.gmu.edu/.

- For information on student support resources on campus, see https://ctfe.gmu.edu/teaching/student-support-resources-on-campus

For additional information on the College of Education and Human Development, please visit our website https://cehd.gmu.edu/students/ .

Rubric: Class 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 well prepared for class by completing assigned readings.
b) Participate fully in class activities and assignments – take an active part in small and large group online discussions (without dominating the conversations). Students will provide evidence of their engagement with video lectures by scoring at least an 80% on quizzes.
c) Discussion Board: Make insightful comments, which are informed by required readings and demonstrate reflection on those readings. Specifically, students should come to the asynchronous 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.

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

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

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

Rubric: Reflection Paper

Criteria	Outstanding (4)	Competent (3)	Minimal (2)	Unsatisfactory (1)
Non-Cognitive Skill Description What is the role of noncognitive skills in your current field of study or learning context? (policy, expectations) What is your take on the teaching and assessment of noncognitive skills for your learning context?	Description is thorough and insightful; makes explicit connections to learning context with examples; reflection is thorough and demonstrates superior understanding of the measurement and use of relevant noncognitive skills in the learning context	Description is thorough; makes explicit connections to learning context with examples; reflection demonstrates understanding of the measurement and use of relevant noncognitive skills in the learning context	Description is general; connections to learning context is unclear or lacks examples; reflection demonstrates understanding of the measurement and use of relevant noncognitive skills in the learning context	Description is incomplete or missing
Noncognitive Skill and Data Literacy Provide an overview of any one noncognitive skill that you want to learn more about: definition, association with academic and non-academic outcomes, an overview of available instruments, strengths/limitations AND facilitators/barriers related to assessing and using non-cognitive skills to inform teaching and learning.	Overview includes the description of an appropriate noncognitive skill; is thorough and detailed; addresses all components of the assignment; makes clear connections to data literacy and DDDM concepts; citations are used consistently to support	Overview includes the description of an appropriate noncognitive skill; addresses all components of the assignment; makes connections to data literacy and DDDM concepts; citations are used consistently to support	Overview includes the description of an appropriate noncognitive skill; addresses some components of the assignment; weak connections to data literacy and DDDM concepts; citations are missing or incomplete	Overview is incomplete or missing; does not address the components of the assignments

	arguments and claims	arguments and claims		
APA Style *Use APA style and formatting*	Uses concise, coherent, well-organized writing with correct APA style.	Writes with some lack of clarity and/or inconsistent APA style with some errors.	Writes with a lack of clarity and coherence, many errors, or incorrect APA style.	Writes with little clarity or coherence, many errors, and/or no use of APA style.

Rubric: Teaching and Assessment Research Paper

Criteria	Outstanding	Competent	Minimal	Unsatisfactory
Nature of learning, teaching, assessment in your learning context/content area	Provides a thorough and detailed narrative of teaching, learning, and assessment in a specific learning context	Provides a complete narrative of teaching, learning, and assessment in a specific learning context	Includes a narrative of teaching, learning, and assessment in a specific learning context; the narrative lacks details	Narrative is missing or incomplete
Major sources of data (assessment and other) in your learning context/ content area	Thoroughly addresses multiple sources of data relevant to the learning context; clear and detailed definitions, processes are described for each data source.	Adequately addresses multiple sources of data relevant to the learning context; definitions and processes for each data source are included	Some data sources are included but lacks detail.	Sources of data are not addressed or incomplete
DDDM in your learning context/ content area	Makes clear and insightful connections between DDDM concepts learned in class and the learning context	Makes connections between DDDM concepts learned in class and the learning context	Makes some connections to DDDM concepts that are general	DDDM is not addressed
A brief literature review of relevant empirical research (2 pages)	Includes a review at least 3 relevant empirical studies in DDDM; each study is summarized and a synthesis paragraph is included that meaningfully connects findings	Includes a review of empirical studies in DDDM; each study is adequately summarized and a synthesis is included;	Includes an incomplete or inadequate review of empirical studies in DDDM; only summaries of	Literature review is not included or is incomplete

	from the studies; citations are included.	citations are included	studies included	
A brief teaching and assessment plan focused on DDDM for continuous improvement	Plan is thorough, detailed and based on the analysis of the learning context and DDDM; plan is realistic and demonstrates best practices in DDDM and pedagogy	Plan is based on the analysis of the learning context and DDDM; plan is realistic and demonstrates best practices in DDDM and pedagogy	Plan makes general or inadequate connections to learning context and DDDM; or contradicts the narratives	Plan is not included or is incomplete
APA Style *Use APA style and formatting*	Uses concise, coherent, well-organized writing with correct APA style.	Writes with some lack of clarity and/or inconsistent APA style with some errors.	Writes with a lack of clarity and coherence, many errors, or incorrect APA style.	Writes with little clarity or coherence, many errors, and/or no use of APA style.

Rubric: Analysis of Teaching and Learning Scenarios

Criteria	Outstanding (5)	Competent (4)	Minimal (3)	Unsatisfactory (0 - 2)
Connections to Coursework *Demonstrate connections to course concepts in the analysis*	The analysis makes clear and insightful connections to relevant course concepts (readings, video)	The analysis makes adequate connections to relevant course concepts	Analysis makes some connections to course concepts that may not be relevant.	Analysis does not include connections to course concepts
Analysis *Analyze the scenario and address the questions*	Analysis is thorough and detailed; fully addresses task requirements	Analysis is complete and adequately addresses task requirements	Analysis is general and addresses only some aspects of the task requirements	Analysis is incomplete or missing.
APA Style *Use APA style and formatting*	Uses concise, coherent, well-organized writing with correct APA style.	Writes with some lack of clarity and/or inconsistent APA style with some errors.	Writes with a lack of clarity and coherence, many errors, or incorrect APA style.	Writes with little clarity or coherence, many errors, and/or no use of APA style.