George Mason University
College of Education and Human Development
Educational Psychology

EDEP 591: D01 – – Introduction to Data Literacy in Education
3 Credits, Summer 2022
Asynchronous Online

Faculty
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Prerequisites/Co-requisites: None

University Catalog Course Description

Provides an intellectual and practical framework for understanding and using educational data to inform pedagogical decision making. Emphasizes the learning principles, cognitive processes, and psychometric models as they pertain to educational data.

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.

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 23, 2022.

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**. Course materials will be released early on Saturdays to facilitate planning for the week.
- 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

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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.

The certificate learner outcomes are:
- o SLO 1: Understand current trends in educational data and ethical use of data relevant to an educational context.
- o SLO 2: Apply knowledge of characteristics of educational data to conduct data analysis and interpretation.
- o SLO 3: Demonstrate understanding of critical issues related to the role of educational data use as related to social justice, collaboration, ethical leadership, innovation, and research based practice.

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:

- o Identify how data-driven decision-making is implied or made explicit in federal statutes and state assessment programs, particularly for the state where employed.
- o Explain the differences between the conceptual frameworks underlying classroom and system level assessment and non-assessment data.
- o Explain how data from these multiple frameworks are applied to inform decision making about learning and teaching.
- o Explain the cognitive bases for learning and their connections to various forms of assessments of learning.
- o Apply multiple learning hierarchies (e.g., Bloom, Krathwohl) to teaching and assessment of student progress.
- o Discern critical issues related to the role of DDDM in public school accountability and high stakes testing including issues of social justice, technology, and privacy.

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:
- o 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.
- o 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.
- o 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:

- o Standards for Teacher Competence in Educational Assessment of Students (1990)
- o Data Quality Campaign
- o Interstate New Teacher Assessment and Support Consortium (INTASC)
- o American Federation of Teachers
- o 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
(The textbook is available for students electronically through the Mason library – see Blackboard for access link.)

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.

- **Class Participation (100 points)**. 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 with assigned readings, lectures, or other class materials.
- **Analysis of teaching-learning scenarios (60 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.
- **Social emotional learning and DDDM Paper (40 points)**. Students will prepare a 4 page (double-spaced, 1 inch margins) essay on the DDDM framework and how it relates to social emotional competencies. The paper will use appropriate research and citations in the literature to develop a reflective essay addressing the following:
  - o What is the role of socioemotional skills or competencies in your current field of study or learning context? (e.g., policy, expectations, available data, culture) What is your take on the teaching and assessment of socioemotional skills for your learning context?
  - o 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, measurement issues (strengths and limitations) AND facilitators/barriers related to assessing the skill to inform teaching and learning.

- **Research Paper: DDDM in Context (50 points).** Each student will prepare a 7 -8 page (double-spaced, 1" margin) paper on DDDM in a learning context. The paper is an opportunity to apply the major concepts learned in the course. Identify a specific problem of practice or topic of inquiry and address the following:
    - o Nature of learning, teaching, assessment in your learning context/content area
    - o A brief review of relevant empirical research (2 pages) about effective learning and use of data to inform decisions in this context
    - o Major sources of data (assessment and other) in your learning context/ content area
    - o Current state/practice of DDDM in your learning context/ content area
    - o A brief plan for enacting DDDM for continuous improvement and to enhance learning and instruction.

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

Professional Dispositions

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

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

Class Schedule

MODULES	WEEKS	TOPICS	READINGS/MULTIMEDIA	ACTIVITES/ASSIGNMENTS DUE AND DUE DATES
Module 1 Foundations of Data Literacy	5/23-5/29	The Educational Context and DDDM	Video: Syllabus Review Module 1 Overview Readings:	Blackboard Discussion Board 1: Ice Breaker Post by: 5/26 at 11:59 pm

			Rising above the Gathering Storm Executive Summary (2007) Mandinach & Jackson (2012) - Introduction & Chapter 1 Popham (1987) Bracey (1987)	Respond by: 5/29 at 11:59 pm
	5/30-6/5	DDDM Frameworks and Data Literacy	Readings: Mandinach & Jackson (2012)- Chapter 2 Mandinach & Gummer (2016)	Blackboard Discussion Board 2: On Data Literacy Post by: 6/2 at 11:59 pm Respond by: 6/5 at 11:59 pm Assignment : Teaching-Learning Scenario (TLS) 1: Analysis of DDDM concepts from Chapter 2
Module 2: Teaching, Learning, and Assessment	6/6-6/12	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 HSL Chapter 2: History NRC HSL Chapter 5: Mathematics NRC HSL Chapter 9: Science 　　　　OR Loewen & Sato (2017) Chapter 12, 14, 15, 16, **OR** 17	Blackboard Discussion Board 3: Culture and Context Post by: 6/9 at 11:59 pm Respond by: 6/12 at 11:59 pm Assignment TLS 2: Concept Mapping with Popplet 6/12 at 11:59 pm
	6/13 – 6/19	Taxonomies and Classification Systems	Readings: Hess et al (2009) Webb's DOK (2002) Alignment – Video Lecture	Blackboard Discussion Board 4: On Standardized Testing (Small Groups) Post by: 6/16 at 11:59 pm Respond by: 6/19 at 11:59 pm Assignment

				TLS 3: Alignment 6/19 at 11:59 pm
	6/20 – 6/26	Assessment's role in teaching and learning	Video: Module 2 Part II Overview Readings: Shepard (2000) Shepard & Penuel, 2018 Mandinach & Jackson Chapter 7	Assignment TLS 4: Standardized testing collaborative group project presentation Due by: 6/26 at 11:59 pm
	6/27 – 7/3	Socioemotional Skills and Competencies Authentic Assessments	Video: Module 2 Overview III Readings: On 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 Post by: 6/30 at 11:59 pm Respond by: 7/3 at 11:59 pm Mini-Quiz on Readings Assignment TLS 5 7/3 at 11:59 pm
	7/4 – 7/10	Assessment's role in teaching and learning Collecting Credible Classroom Evidence	Readings: Brookhart(2016) RTI Fundamentals (Kurtz, 2009) Added: Reliability, Validity, and Fairness (Screen Capture Video Lecture)	Mini Quiz for participation SEL & DDDM PAPER DUE Due 7/10 1:59 pm
	7/11 - 7/17	Engaging Students in the assessment process	Readings: Nicol & McFarlane-Dick (2006) Ladson-Billings (2006) Lasater et al (2020) Equity and DDDM	Blackboard Discussion Board 7: Involving Students Post by: 7/14 at 11:59 pm Respond by: 7/17 at 11:59 pm Assignment TLS 6: Equity and DDDM 7/17 at 11:59 pm

				Research Paper Planning: Optional individual meeting with Dr. Varier
Module 3: DDDM in Context	7/18 – 7/24	Factors influencing DDDM: Data use Culture, Technology Ethical Use of Data in Education	Video: Module 3 Overview Readings: Mandinach & Jackson Chapter 3, Chapter 6	Blackboard Discussion Board 8: Data Culture & Technology Post by: 7/21 at 11:59 pm Respond by: 7/24 at 11:59 pm
	7/25	Factors influencing DDDM	Readings: Mandinach & Jackson Chapter 8, Chapter 4	Blackboard Discussion Board 9: Wrap-up Research Paper Due by July 27 11:59 pm

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

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 https://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 https://ds.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 VIA should be directed to viahelp@gmu.edu or https://cehd.gmu.edu/aero/assessments . Questions or concerns regarding use of Blackboard should be directed to https://its.gmu.edu/knowledge-base/blackboard-instructional-technology-support-for-students/.
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- For information on student support resources on campus, see https://ctfe.gmu.edu/teaching/student-support-resources-on-campus

Notice of mandatory reporting of sexual assault, sexual harassment, interpersonal violence, and stalking:
As a faculty member, I am designated as a "Non-Confidential Employee," and must report all disclosures of sexual assault, sexual harassment, interpersonal violence, and stalking to Mason's Title IX Coordinator per University Policy 1202. If you wish to speak with someone confidentially, please contact one of Mason's confidential resources, such as Student Support and Advocacy Center (SSAC) at 703-380-1434 or Counseling and Psychological Services (CAPS) at 703-993-2380. You may also seek assistance or support measures from Mason's Title IX Coordinator by calling 703-993-8730, or emailing titleix@gmu.edu.

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