

### General Information

**Time:** Tuesdays, 4:30 PM – 7:10 PM  
**Location:** Thompson Hall, L003  
**Instructor:** Dr. Nada Dabbagh  
**Phone:** (703) 993-4439

**Division of Learning Technologies**  
**IDT Program:** <http://learntech.gmu.edu/idt/>  
**Office:** Thompson Hall, L047 (office hours by appointment)  
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### Course Description

**Catalog Description:** Provides students with the knowledge and skills for designing highly contextualized and engaging problem-solving learning environments using a grounded, theory-based design approach. Emphasizes the design of technology supported learning environments using a variety of pedagogical models.

**Expanded Description:** Provides students with the knowledge and skills for designing highly contextualized and engaging problem-solving learning environments (PSLEs) based on the principles of constructivism, situated cognition, and distributed learning. Readings expose students to a range of epistemological and theoretical perspectives as evidenced by instructional design literature and applications. The focus is on **grounded or theory-based design**, which differs from the systematic process of instructional design as discussed in EDIT 705 (e.g., ADDIE). However, the principles of systematic instructional design are fundamental to understanding and implementing this design approach. The course also emphasizes the design of online or technology supported learning environments (TSLEs) using a variety of pedagogical models.

**Pre-requisites:** EDIT 705; students are expected to be proficient in the principles and processes of instructional design (e.g., performing task and audience analysis, writing learning outcomes or instructional objectives, and aligning learning outcomes with taxonomies for identifying learning domains and assessment).

**Nature of Course Delivery:** The course will be conducted through a mixture of lecture, in-class discussions and activities, online discussions, and individual and collaborative activities including a final design project.

### Course Objectives (Learning Outcomes)

1. Develop an understanding of epistemological approaches to learning and cognition such as **objectivism, cognitivism, constructivism, distributed cognition, and connectivism**.
2. Develop an understanding of **grounded design or theory-based design**.
3. Develop an **applied** understanding of **constructivism** and its implications for designing problem-solving learning environments (PSLEs).
4. Examine alternative constructivist-based **pedagogical models** and their implications for the design of PSLEs and TSLEs.
5. Appreciate the importance of the linkage between theories of learning and instructional design practice.

### Professional Standards

The learning outcomes for this course align with the 2012 International Board of Standards for Training, Performance and Instruction (IBSTPI) competencies of *Professional Foundations* and *Design and Development* as follows ([see http://www.ibstpi.org/instructional-design-competencies/](http://www.ibstpi.org/instructional-design-competencies/)):

- Apply research and theory to the discipline of instructional design (Advanced)
- Update and improve knowledge, skills, and attitudes pertaining to the instructional design process (Essential)
- Use an instructional design and development process appropriate for a given project (Essential)
- Design instructional interventions (Essential)
- Select or modify existing instructional materials (Essential)
- Develop instructional materials (Essential)
- Design learning assessment (Advanced)

## Instructional Resources

### Required Texts:

(1) Learning to Solve Problems: A Handbook for designing problem-solving learning environments (Jonassen), 2011, Routledge, Taylor & Francis. | ISBN-10: **0415871948** | ISBN-13: **978-0415871945**

Additional readings will be on Blackboard and/or provided as handouts in class. The Blackboard course website will have a variety of **instructional resources organized according to the learning modules in the timeline below and should be explored with each module**. To access Blackboard, go to [mymason.gmu.edu](http://mymason.gmu.edu)

## Learning Activities, Performance Based Assessments, and Grading Policy

### **CLE (Constructivist Learning Environment) Criteria and Application** **25% of grade**

In groups, students will (a) identify theoretical principles and instructional characteristics of Constructivist Learning Environments (CLEs) based on the readings and additional reliable resources, (b) contrast these to the theoretical principles and instructional characteristics of Objectivist Learning Environments (OLEs), (c) find and share an example of a CLE that is technology supported and subscribes to the CLE principles and characteristics identified, and (d) critique the extent to which the selected CLE example embodies the principles of constructivism. The end product for this assignment is a 20-25 minute in-class presentation that describes the findings of the group with respect to these items. More detail is provided on the course website under assignments.

### **Online and In-Class Participation** **20% of grade**

The course includes online and in-class discussions and activities. Online activities include the use of blogs, vlogs, or discussion forums (10%) designed to help you articulate your understanding of the readings, share multiple perspectives and provide constructive peer feedback. In-class activities (10%) include group work and whole group discussions. *Students are expected to come to class fully prepared to discuss the readings*. Rubrics for evaluating class participation are provided on the course website under assignments. **On time class attendance is critical to successful class participation.**

### **Pedagogy Brief** **25% of grade**

Each student will select a constructivist based pedagogical model (e.g., cognitive apprenticeship, community of practice, situated learning, problem based learning) or an instructional strategy (e.g., collaboration, articulation, scaffolding, problem solving) and write a **pedagogy brief** based on the *5 Things You Need to Know About* this pedagogy: (1) What is it? (2) How does it work? (3) Who is doing it? (4) How effective is it? (5) What are its implications for instructional design? References should include course readings as well as new empirical research related to the selected model or strategy. More detail is provided on the course website under assignments.

### **Designing a Constructivist Learning Environment (CLE)** **30% of grade**

Using the pedagogical model selected for the short research paper, students will apply a **grounded design approach** to develop a **prototype of the CLE** for a specific target audience and learning content selected by the student. The final deliverable for this assignment should include the following **three** components:

1. A proposal (design document) describing the parameters of the CLE including the pedagogical model selected; the learning problem (authentic context) or challenge that will engage the target audience; the learning outcomes; characteristics of the target audience; the learning activities; and the assessment approach.
2. A table depicting the grounded design of the CLE. The table is a blueprint or storyboard of the prototype and should illustrate the mapping or alignment of four design elements: (1) learning outcomes, (2) instructional strategies (derived from the instructional characteristics of the pedagogical model selected), (3) learning activities or tasks (what the learners will do), and (4) assessment criteria.
3. A prototype of the CLE showing the **learning activities** that the learners will engage in. The prototype can be developed in PPT or a technology of your choice (e.g., wiki, LMS, website, Adobe Captivate, etc.).

**Grades are based on the successful completion of course requirements and on the scope, quality and creativity of the assignments. To get an A in this course, students should demonstrate critical thinking skills through active synthesis of reading material, integration of prior knowledge and experience, and through problem-solving, argumentation, and reasoning.**

**Grade distribution is as follows:** A + = 97 - 100 (exceeds expectations on all requirements); A = 93 - 96 (meets expectations, excellent performance); A- = 90 - 92 (meets expectations, very good performance), B+ = 86 - 89 (meets most expectations, good performance), B = 83 - 85 (meets most expectations, satisfactory performance); B- = 80 - 82 (meets some expectations, average performance); C = 70 - 79 (notably below expectations).

**The instructor reserves the right to deduct up to 10% of an assignment grade per day for late submissions without a valid excuse. Missing more than 2 classes over the semester can also result in grade reduction.** If you miss class, it is **your responsibility to make up** the work (this includes classwork).

### **TK20 PERFORMANCE-BASED ASSESSMENT SUBMISSION REQUIREMENT**

Every student registered for any IDT program course with a required performance-based assessment is required to submit this assessment, in this case **Designing s CLE**, to Tk20 through Blackboard (regardless of whether the student is taking the course as an elective, a onetime course or as part of an undergraduate minor). Evaluation of the performance-based assessment by the course instructor will also be completed in Tk20 through Blackboard. Failure to submit the assessment to Tk20 (through Blackboard) will result in the course instructor reporting the course grade as Incomplete (IN). Unless the IN grade is changed upon completion of the required Tk20 submission, the IN will convert to an F nine weeks into the following semester.

**Rubric for Evaluating Designing a Constructivist Learning Environment (CLE) (rubrics for the other assignments are available on the course website)**

<b>IBSTPI Competency</b>	<b>Criteria</b>	<b>Exceeds Standards</b>	<b>Meets Standards</b>	<b>Does Not Meet Standards</b>
<b>Professional Foundations: 1: Communicate effectively in written &amp; oral form</b>	<b>Project Proposal</b>	All key elements of the project proposal are included and effectively described;	Most key elements of the project proposal are included and effectively described	Key elements of the project proposal are missing OR
<b>Planning &amp; Analysis: 7: Identify &amp; describe target population &amp; environmental characteristics</b>	<b>Project Proposal</b>	The selection of the pedagogical model is appropriate for the learning problem	All key elements are covered but the alignment across the elements is not clear	The elements are not described effectively or do not align with the selected pedagogical model
<b>Design &amp; Development: 11: Organize instructional programs and/or products to be designed, developed, and evaluated</b>	<b>Design Table</b>	All key elements of the design table are included	Most key elements of the design table are included and pedagogically aligned	Several elements of the design table are missing
<b>Design &amp; Development: 12: Design instructional interventions</b>	<b>Design Table</b>	All key elements of the design table are pedagogically aligned	All key elements of the design table are included but some are not pedagogically aligned	Several elements of the design table are not pedagogically aligned

<b>Planning &amp; Analysis: 9: Analyze the characteristics of existing &amp; emerging technologies &amp; their potential use</b>	<b>Prototype</b>	Prototype uses appropriate technologies to demonstrate all aspects of the design table	Most aspects of the design table are demonstrated in the prototype using appropriate technologies	Several aspects of the design table are missing in the prototype design
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<b>Course Timeline</b>	<b>(subject to change)</b>
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**Module 1: Learning Paradigms and Instructional Design*****Tuesday January 19 (week 1)******f2f class***

- Course intro
- In-class icebreaker activity
- General discussion on learning theories and epistemologies
- Post bios to Blackboard “Meet & Greet” forum
- Post a brief summary of a learning or training design problem that you have recently encountered or solved to Blackboard “Learning Design Problems” forum

**Readings/activities to be completed by Tuesday January 26**

- Ertmer & Newby (2013). Behaviorism, cognitivism, constructivism: Comparing critical features from an instructional design perspective (Bb)
- Jonassen (1991). Objectivism versus constructivism: Do we need a new philosophical paradigm? (Bb)
- Siemens (2005). Connectivism: A learning theory for the digital age (Bb)
- Provide comments on the “Meet and Greet” and “Learning Design Problems” forums as appropriate
- Explore online resources under Module 1
- Come prepared to share your objectivism-constructivism comparison table

***Tuesday January 26 (week 2)*****ASSIGN TEAMS FOR CLE ASSIGNMENT*****f2f class***

- Discuss readings/resources, develop epistemology comparison table

**Module 2: Situated Learning, Cognitive Apprenticeship, Communities of Practice****Readings/resources to be completed/explored by Tuesday February 2**

- Herrington, Reeves, & Oliver (2014). Authentic Learning Environments (Bb)
- Collins (2006). Cognitive apprenticeship (Bb)
- Explore online resources under Module 2

***Tuesday February 2 (week 3)******f2f class***

- Discuss readings/resources, complete related learning activities

**Readings/resources to be completed/explored by Tuesday February 9**

- Communities of Practice: A brief introduction by Etienne Wenger (Bb)
- CoP Primer (Bb)
- View the Jasper Videos
- Explore online resources under Module 2

***Tuesday February 9 (week 4)******online class***

- Discuss readings/resources online, complete related learning activities
- Work on the CLE assignment

***Tuesday February 16 (week 5)*****CLE PRESENTATIONS*****f2f class*****Module 3: Instructional Design for Constructivist Learning Environments (CLE)/PSLEs****Readings/resources to be completed/explored by Tuesday February 23**

- Chapters 5 & 6 (Online Learning text) (Bb)
- Explore online resources under Module 3

***Tuesday February 23 (week 6)*****SELECT TOPIC FOR BRIEF*****f2f class***

- Discuss readings/resources, complete related learning activities

**Readings/resources to be completed/explored by Tuesday March 1**

- Chapters 1, 8, & 10 (Learning to Solve Problems text)
- Explore online resources under Module 3

***Tuesday March 1 (week 7)******f2f class***

- Discuss readings/resources, complete related learning activities

<b>Tuesday March 8 (week 8)</b>	<b>SPRING BREAK</b>	<i>no class</i>
<u>Readings/resources to be completed/explored by Tuesday March 15</u>		
➤ Dabbagh & Dass (2013). Case problems for problem-based pedagogical approaches (Bb)		
<b>Tuesday March 15 (week 9)</b>		<i>online class</i>
➤ APA style writing workshop		
➤ Discuss readings/resources		
<u>Readings/resources to be completed/explored by Tuesday March 22</u>		
➤ Chapters 7 & 22 (Learning to Solve Problems text)		
➤ Chapter 7 (Online Learning text) (Bb)		
<b>Tuesday March 22 (week 10)</b>	<b>PEDAGOGY BRIEF DUE</b>	<i>f2f class</i>
➤ Discuss readings/resources, complete related learning activities		
<b><u>Module 4: Case-Based Learning, Goal-Based Scenarios</u></b>		
<u>Readings/resources to be completed/explored by Tuesday March 29</u>		
➤ Chapter 12 & 13 (Learning to Solve Problems text)		
➤ Hsu & Moore (2011). Formative research on the goal-based scenario model (Bb)		
➤ Explore online resources under Module 4		
<b>Tuesday March 29 (week 11)</b>		<i>online class</i>
➤ Discuss readings/resources online, complete related learning activities		
<b><u>Module 5: Problem-Based Learning</u></b>		
<u>Readings/resources to be completed/explored by Tuesday April 5</u>		
➤ Newman (2005). Problem Based Learning: An Introduction and Overview (Bb)		
➤ Dabbagh et al. paper on PBL (Bb)		
➤ Explore online resources under Module 5		
<b>Tuesday April 5 (week 12)</b>		<i>f2f class</i>
➤ Discuss readings/resources, complete related learning activities		
<b><u>Module 6: Games &amp; Simulations</u></b>		
<u>Readings/resources to be completed/explored by Tuesday April 12</u>		
➤ Barab, Gresalfi, Ingram-Goble (2010) – Transformational Play (Bb)		
➤ Prensky (2001) – Simulations: Are They Games (Bb)		
➤ Chapter 14 (Learning to Solve Problems text)		
➤ Explore online resources under Module 6		
<b>Tuesday April 12 (week 13)</b>		<i>online class</i>
➤ Discuss readings/resources, complete related learning activities		
<b>Tuesday April 19 (week 14)</b>	<b>FINAL PROJECT PROPOSAL DUE</b>	<i>f2f class</i>
➤ Guest speakers		
➤ Class synthesis		
<b>Tuesday April 26 (week 15)</b>	<b>WORK ON FINAL PROJECT</b>	<i>no class</i>
<b>Tuesday May 3 (week 16)</b>	<b>FINAL PROJECT PRESENTATIONS</b>	<i>f2f class</i>
<b>Tuesday May 10 (week 17)</b>	<b>FINAL PROJECT DUE</b>	<i>f2f class</i>

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## BLACKBOARD REQUIREMENTS

Every student registered for any Instructional Design and Technology course with a required performance-based assessment is required to submit this assessment, Designing a CLE to Blackboard (regardless of whether a course is an elective, a onetime course or part of an undergraduate minor). Evaluation of the performance-based assessment by the course instructor will also be completed in Blackboard. Failure to submit the assessment to Blackboard will result in the course instructor reporting the course grade as Incomplete (IN). Unless the IN grade is changed upon completion of the required Blackboard submission, the IN will convert to an F nine weeks into the following semester.

## GEORGE MASON UNIVERSITY POLICIES AND RESSOURCES FOR STUDENTS

### *Student Expectations*

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

### *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/>].