

SIED 5323 – Spring 2007

Societal Context of Science Education

Monday, 5:30-8:20 PM, EDUC Room 405

"Students should know what it feels like to be completely absorbed in a problem. They seldom experience this feeling in school" – Jerome Bruner, The Process of Education

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Office hours: Monday 4:00 - 5:30 PM, Tuesday 11:00 AM – 12:30 PM

Required Text

Lynn Erickson (2002) Concept-Based Curriculum and Instruction: Teaching Beyond the Facts, H. Corwin Press, Inc., Thousand Oaks, CA - ISBN # 0761946403 (paperback)

Additional Articles will be posted as links and/or as handouts for students to read prior and will be assigned regularly.

Required Software

Dreamweaver MX software (Educational or Full Version) is the professional choice for building Web sites and applications. It provides a powerful combination of visual layout tools, application development features, and code editing support. Students will develop and post their own Web site on the UTEP domain as a final product. Inspiration software (Educational or Full Version) is the professional choice for building concept maps and schematic diagrams. Students build graphic organizers to represent concepts and relationships and use the integrated outlining capability to further organize ideas for reports.

Grading

A: 90% - 100%, B: 80% - 89%, C: 70%-79%, D: 60%-69%, F: <60%

The overall grade for the class for each student will be calculated as follows: 20% Daily Attendance & Participation, 20% Short Research Papers, 20% Online Quizzes (2) and Discussions (3), 30% Final Product Development, 10% Final Product Presentation.

Course Description

Societal Context of Science Education develops and applies understanding of field, community, and cultural resources and develops family and community partnerships in a relevant science context. Students develop a learning unit based on instructional models such as the learning cycle lesson design and the 5-E model. Societal Context of Science Education explores historical perspectives of science and the role of science in societal

decisions. The class includes research-based principles in science learning and technology integration.

The class utilizes a Problem-Based learning (PBL) approach to curriculum development and delivery. Problem-Based learning (PBL) is an inquiry-based approach that can be defined as both a curriculum and a process. The curriculum consists of carefully selected and designed problems that engage the learner in the process of acquiring critical knowledge, developing proficiency in problem solving, engaging in self-directed learning, and participating in collaborative teams. This curriculum integration process engages students in collaborative research that can be shared in the classroom, across a community or around the globe. PBL features open-ended and cooperative activities that deal with real world issues and scenarios.

The curriculum approach will follow the Critical Thinking Curriculum Model (CTCM), which is a multidisciplinary approach designed to encompass computer technology, a current real world issue, and effective learning and teaching practices. As a PBL curriculum, it encompasses the political, social/cultural, economic, and scientific realms in the context of a real world issue. In this way, students realize the importance of their schooling by applying their efforts to an endeavor that ultimately will affect their future.

Goals

- To provide opportunities to develop and apply critical thinking and problem solving skills through open ended approaches in meeting specific course objectives and goals
- To articulate the connections between scientific concepts and everyday life.
- To identify and articulate conceptual understandings and desired outcomes within a problem-based learning curriculum.
- To engage in class discussions and assignments that requires the integration of skills in content development and content delivery.
- To analyze and synthesize an understanding of course material in both classroom and online environments through multiple classroom interaction strategies.
- To increase understanding of technology integration in articulating a concept-based science education curriculum product.

Objectives

All graduate students will become more effective in the following areas:

- Writing a Problem-Based Learning (PBL) curriculum unit
- Written and oral communication
- Use of technology including Inspiration software and Dreamweaver software
- Critical reading of texts and Web sites
- Write reflectively about teaching, learning, and society
- Build a functional PBL Web Site on the uminers.utep.edu domain
- Becoming proficient in the curriculum alignment process
- Address the Texas Essential Knowledge and Skills (TEKS) for appropriate grade levels

Instructions for Accessing Your Course Online via WebCT

You must have an UTEP e-mail id and password before you can access WebCT. UTEP automatically generates an e-mail id for you when you are entered into the system. If you do not have your id or do not remember the id or password call the helpdesk first at (915) 747-5257

All the course content will be delivered via WebCT. You can access WebCT by following the steps outlined below

- **Go to** <http://my.utep.edu>
- **Your login is your e-mail id and your password is your e-mail password.**
- Once you are in the **my.utep.edu** portal, you can find the link to WebCT near the top of the webpage

In case the above URL does not work, you can do the following:

- Go to <http://WebCT.utep.edu>
- **Your login is your e-mail ID but your password is your goldmine password,** which is generally a 6 digit number. You need to have an UTEP e-mail ID to be able to access WebCT.

Once you are logged into WebCT, you will find all the courses you are registered for, under the appropriate semester. Click on your course title to access the course.

Contact Help Desk to get your Web space on utminers.utep.edu domain

- Within Campus: x4357 {help}
- Outside Campus: 747-5257
- Must have utep.edu email account
- Request FTP (File Transfer Protocol) access for the site

UTMiners Web-Hosting Service

- Username is your miners\email username
- Password is your current web mail password
- For domain: MINERS

Web Hosting Services

Each user is given 10 MB of space for hosting web pages. Your web URL will be <http://utminers.utep.edu/username>. You must agree to the Web Hosting Guidelines at UTEP. You must also have a UTEP email account and you can get your UTEP Miners E-mail at <https://newaccount.utep.edu>.

Class Schedule

Date	In-class activity	Online activity	Homework
Monday, January 22 nd	Class Overview Syllabus Review PBL Introduction	Use of WebCT at UTEP for Class materials WebCT discussion boards	Read Chapter 1 in <u>Concept- Based Curriculum and Instruction</u>
Monday, January 29 th	Inspiration Instruction and Practice The Critical Thinking Curriculum Model	Inspiration Overview and Hands-on Practice – Handout and CD Seminars on Science	Read Chapter 2 in <u>Concept- Based Curriculum and Instruction</u>
Monday February 5 th	Inspiration Products – Concept Maps Guiding Questions for Reflection Papers 1	Seminars on Science Research into PBL Web Sites - Links	Read Chapter 3 in <u>Concept- Based Curriculum and Instruction</u>
Monday February 12 th	ONLINE CLASS ONLY No F2F Meeting	Discussion 1 on Principles of PBL – due by Feb. 12 at 9 PM	
Monday February 19 ^h	Overview of Technology Tools – Dreamweaver, Inspiration	Classroom Development of PBL Quiz 1 on Chapters 1-3	Identify PBL topic and share on 3/5 in class
Monday February 26 th	Dreamweaver Session 1 - Planning	Reflective Paper 1 Due in WebCT	Read Chapter 4 <u>Concept- Based Curriculum and Instruction</u>

Date	In-class activity	Online activity	Homework
Monday March 5 th	Sharing of PBL Topics Dreamweaver Session 2 - Research	Classroom Development of PBL Products	Read Chapter 5 <u>Concept-Based Curriculum and Instruction</u>
Monday March 12 th	No Class – Spring Break	No Class – Spring Break	No Class – Spring Break
Monday March 19 th	ONLINE CLASS ONLY No F2F Meeting	Discussion 2 on PBL and Concept Design – due by March 19 at 9 PM	Student Development (on your own) of PBL Products
Monday March 26 th	Guiding Questions for Reflection Papers 2 Dreamweaver Session 3 - Development	Quiz 2 on Chapter 4-5	Continue Working on PBL identification and project for presentation
Monday April 2 nd	Dreamweaver Session 4 - Refinement Project and Presentation Overview and Rubrics Dreamweaver Session 5 - Implementation	Reflective Paper 2 Due on assignments section in WebCT Classroom Development of Problem-Based Learning Final Products	Student Development (on your own) of PBL Final Products
Monday April 9 th	ONLINE CLASS ONLY No F2F Meeting	Discussion 3 on the Relevance in Creating Integrated PBL Units – due by April 9 at 9 PM	Continue Working on PBL identification and project for presentation

Date	In-class activity	Online activity	Homework
Monday April 16 th	Sharing of PBL Topics Dreamweaver Review	Classroom Development of PBL Final Products	Continue Working on PBL identification and project for presentation
Monday April 23 rd	Class Development of PBL Final Products	Classroom Development of PBL Final Products	Student Development (on your own) of PBL Final Products
Monday April 30 th	PBL Product Finalized and Delivered Class Presentations	PBL Product Finalized and Delivered Class Presentations	

UTEP Policies

Academic Dishonesty

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another person's as ones' own. And, collusion involves collaboration with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. Violations will be taken seriously and will be referred to the Dean of Students Office for possible disciplinary action. Students may be suspended or expelled from UTEP for such actions.

Students with Disabilities

If you have or believe you have a disability, you may wish to self-identify. You can do so by providing documentation to the Office of disabled Student Services located in Union E Room 203. Students who have been designated as disabled must reactivate their standing with the Office of Disabled Student Services on a yearly basis. Failure to report to this office will place a student on the inactive list and nullify benefits received. If you have a condition which may affect your ability to exit safely from the premises in an emergency or which may cause an emergency during class, you are encouraged to discuss this in confidence with the instructor and/or the director of Disabled Student Services. You may call 747-5148 for general information about the Americans with Disabilities Act (ADA).