



EDLE 982—Curriculum Design, Practice and Assessment

Developing Inquiry-based STEM Units (4 credits)

Course Instructor: Mary Ellen DuBois, Pat Hamblett

Dates: January 28 - May 13, 2009

Format: Online interactions/discussions plus two face-to-face sessions

Course Description

The course will center on Wiggins and McTighe's backward design framework as a means to support the design of instructional materials that develop deep understanding in students. Participants will explore and utilize the educational tenets fundamental to the creation of effective classroom learning materials. Participants will be challenged to consider and design instructional objectives for a unit that is engaging, hands-on, inquiry-based and integrates technology. Participants will learn more about *Teaching for Understanding, Inquiry-based and Project-based Learning* and critical thinking and integrate components of these theories into their unit.

Throughout the course participants will work collaboratively on projects and share ideas and materials online. They will reflect on best practices and learn how to integrate these practices into their repertoire and content expertise. They will learn how to constructively critique one another's work in order to enhance and improve their materials and instruction.

Course Objectives

1. Develop a thorough understanding of Teaching for Understanding, Inquiry-based Learning, Project-based Learning and critical thinking
2. Discover teachers' current understanding regarding curriculum and the development of instructional materials and connect that knowledge to the broader perspective of teaching for understanding
3. Recognize the relationship among curriculum, assessment and instruction
4. Learn about and use the components of Understanding by Design (Wiggins and McTighe)
5. Create essential questions as a means of focusing a unit of study
6. Create a unit of study in a teacher's content area using the "backwards design"
7. Critique a colleague's unit of study as a collaborative peer
8. Integrate technology into each teacher's instructional practice

Course Expectations/Requirements

Participants will:

1. Review articles covering a range of frameworks as well as evidence from their own practice and other resources, and demonstrate their understanding by writing brief reaction papers.



Course Expectations/Requirements (cont'd)

2. Research *Teaching for Understanding, Inquiry-based and Project-based Learning* and critical thinking in collaborative teams and create a presentation to share with their colleagues.
3. Collaborate within prompted discussions as they develop and reveal their understanding of curriculum development and assessment.
4. Demonstrate an understanding of relationships between curriculum development and teaching for understanding by analyzing a current lesson.
5. Demonstrate a working knowledge of terms related to curriculum design terminology through participant writing.
6. Develop, explain and show evidence of their insights and understanding by designing a specific unit that includes a minimum of three lessons and an assessment and rubric based on the "Backwards Design" design template.
7. Use their new understanding of curriculum design to critique developed units.
8. Create and share a presentation of their final unit with their colleagues.

Materials

Wiggins, G. and McTighe, J. (2005). Understanding by Design. Alexandria, Virginia: Association for Supervision and Curriculum Development.

McTighe, J. & Wiggins, G. (2004). Understanding by Design: Professional Development Workbook. Alexandria, Virginia: Association for Supervision and Curriculum Development.

Websites

Inquiry

<http://www.inquiry.uiuc.edu/index.php>

<http://www.thirteen.org/edonline/concept2class/inquiry/index.html>

Project Based Learning

http://www.bie.org/index.php/site/PBL/pbl_handbook/intro.php

<http://www.rmcdenver.com/useguide/pbl.htm>

Teaching for Understanding

<http://learnweb.harvard.edu/alps/tfu/design.cfm>

<http://www.newhorizons.org/strategies/understanding/unger.htm>

Critical Thinking

<http://www.utc.edu/Administration/WalkerTeachingResourceCenter/FacultyDevelopment/CriticalThinking/#characteristics>

<http://www.ericdigests.org/pre-9218/critical.htm>

Grading Criteria

Participation in online, interactive discussions-25%

Group Project-15%

Individual assignments-20%

Final Project-40%