

LSU - DEPARTMENT OF CURRICULUM AND INSTRUCTION
EDCI 4465/SECTION 3/SUMMER 2003
Seminar: Reflective Teaching of Mathematics in Secondary Schools
Louisiana State University – Baton Rouge

TIME: 1:40 p.m. – 4:30 p.m. MW

PLACE: 104 PEABODY

INSTRUCTOR: Dr. Terrie T. Poehl, Assistant Professor-Professional Practice
Department of Curriculum & Instruction
230 Peabody Hall PHONE: 578-6878
E-mail: tpoehl@lsu.edu FAX: 578-9135

PRACTICUM INTERN:
Mrs. Carol Williams
Teacher, E. J. Gay Middle School
Education Specialist Candidate
E-mail: chough1@lsu.edu

OFFICE HOURS: 10:00 p.m. - 1:00 p.m. MW
Other times by appointment

CATALOG DESCRIPTION: (3 CREDITS) Critical issues and pedagogical practices related to the reflective teacher of mathematics.

COURSE GOALS:

This course is designed to develop reflective teaching practices in mathematics. The student will be exposed to a wide range of issues and theories in mathematics education, and encouraged to relate these to his/her own teaching practices. Opportunities for teaching and observation of teaching will be provided in order to analyze and reflect on teaching practices in mathematics. The course goals encourage students to make meaningful connections between theory and practice through a variety of experiences.

In this course you will work on mathematical topics appropriate for you and your classroom, as well as focus on the teaching of secondary school mathematics. The course design facilitates disciplined reflective inquiry into the education process through the interaction of theory and practice. Throughout the course you will be encouraged to reflect on your learning as a tool for thinking about how mathematics learning occurs.

The philosophy of this course is that people, of all ages and many learning styles, learn best in an environment where they explore topics and come to their own understanding. This environment includes working cooperatively with others from diverse backgrounds in heterogeneous settings, and is consistent with the College of Education's mission to prepare teaching professionals who practice in culturally diverse settings.

TEXTS:

Required:

Teaching Secondary Mathematics (Sixth Edition) by Alfred S. Posamentier and Jay Stepelman (2002)

Understanding by Design by Grant Wiggins and Jay McTighe (1998)

Principles and Standards for School Mathematics (NCTM, 2000) Available through NCTM either as hardcopy or softcopy

Optional Reading:

Louisiana Mathematics Framework. Available in materials folder of Semester Book

Louisiana Technology Standards. Available in materials folder of Semester Book

Louisiana Technology Plan. Available in materials folder of Semester Book

Linking Technology and Curriculum by Jeri Carroll and Tonya Witherspoon (2002) Bundled with TSM

Mathematics on the Internet: A resource for K-12 teachers by Jerry Ameis (2002) Bundled with TSM

Resources: (available softcopy through NCTM at www.nctm.org)

Curriculum and Evaluation Standards for School Mathematics (NCTM, 1989)

Assessment Standards for School Mathematics (NCTM, 1995)

Professional Standards for Teaching Mathematics (NCTM, 1991)

OTHER REQUIRED ITEMS:

Computer with Adobe Reader and Printer

E-mail

Internet Access

CELL PHONES AND PAGERS:
These items cause an unnecessary distraction during class. Please either turn them off or put them in a non-audible alert mode during the entire class time. Answering a phone call during class is rude behavior and will affect your participation grade.

COURSE OBJECTIVES:

1. To introduce the students to current perspectives in secondary school mathematics education.
2. To have students begin reflection on the practices of teaching that have influenced them as well as the influences of their practices on their students.
3. To have students explore philosophies of mathematics (including their own) in relation to philosophies of mathematics education.
4. To engender skills of productivity using and giving constructive criticism of teaching practices.
5. To acquaint students with various types of manipulatives and other concrete materials available for modeling and developing topics in secondary mathematics.
6. To develop facility with a variety of calculator and computer applications appropriate for secondary school mathematics topics.
7. To introduce students to a variety of teaching approaches for secondary school mathematics.
8. To become acquainted with mathematics in a broader cultural context.
9. Demonstrate strategies for helping students become lifelong mathematics learners.
10. Create and teach reform-based lesson plans to children.
11. Identify and explore sophisticated topics that can be adapted for special populations of students (mentally challenged, behavior disorders, gifted, etc.).
12. Discuss the scope and sequence for techniques used for teaching grades 9-12. The techniques include addressing the use of the Louisiana Mathematics Content Strands and Standards, Louisiana K-12 Educational Technology Guidelines, and NCTM Principles and Standards for School Mathematics.

Themes and Strategies

Mathematical Connections - Integrating mathematics within mathematical domains and with other curriculum areas, the environment, and children's literature.

Mathematics as Problem Solving - Innovative curriculum materials emphasizing problem solving in today's world and in textbooks.

The Learning Environment - Fostering mathematical understanding and reasoning, communications through a variety of teaching strategies, and lesson planning.

Worthwhile Mathematical Tasks - Selection, use, and design of instructional materials.

Assessing Children's Mathematical Understanding - Alternative assessment procedures.

Technology Teaching Tools - Graphing calculators, computer software, Internet resources, and multimedia.

Research - use of ERIC, Eisenhower National Clearinghouse, National Council for Teachers of Mathematics, library materials, etc.

COURSE ASSIGNMENTS AND ASSESSMENT EVALUATION

Percentage	Activity
15%	Field-based Experience Portfolio: 17 hour minimum consisting of 2 hours of observation (schools listed in assignment description) and 15 hours of tutoring LSYou students.
5%	Field Experience Update weekly assignments
10%	Lesson Plans
15%	Presentations:
	CBL/CBR/Graphing Calculator Lesson
	Manipulative or Computer Software Lesson
15%	Written Assignments:
	Article Critiques (2)
	Autobiography/Resume and Autobiography/Resume Revision
5%	Resource File
5%	Class Assignments
5%	Reflective Journal (Semester Book online assessment)
10%	Midsemester Exam (Cumulative)
15%	Final Exam (Cumulative)

You should complete all written assignments in a neat and orderly manner. Please type all assignments unless otherwise indicated. Assignments are due on the dates specified. You are to submit a hardcopy of all assignments. Therefore, solve technology problems in a timely manner. I do not accept softcopies of assignments. This means that e-mail attachments and diskette submissions containing files are not acceptable. You will not receive full credit on any assignment submitted after the due date. Also, no assignment will be accepted after one week of its stated due date. All assignments must be submitted by the last day of class. Please note a grade on any assignment is neither a judgment of you as a person nor the amount of time you spent completing the assignment, but rather of the quality of your work.

Grading Scale:

100% - 92%	A
91% - 83%	B
82% - 74%	C
73%- 65%	D
64%- 0%	F

IMPORTANT LSU DATES:

11-Jun-2003	Final date for dropping courses without receiving a grade of "W"
12-Jun-2003	Final date for adding courses for credit and making section changes
30-Jun-2003/01-Jul-2003	Midsemester Exam Period
04-Jul-2003	Independence Day Holiday
15-Jul-2003	Last day to drop courses or resign from the university
28-Jul-2003	Last day of classes
29-Jul-2003	Concentrated Study Day
30-Jul-2003/31-Jul-2003	Final Exam Period

READING ASSIGNMENTS FOR FOLLOWING CLASS

DATE	TEACHING SECONDARY MATHEMATICS	UNDERSTANDING BY DESIGN	NCTM PRINCIPLES AND STANDARDS
09-Jun-2003	p. 2-16	p. 1-6	None
11-Jun-2003	p. 55-71	None	p. 1-8, 11-27
16-Jun-2003	p. 72-88	p. 7-19	None
18-Jun-2003	p. 89-92, 96-108	None	p. 29-43
23-Jun-2003	p. 108-117	p. 20-37	None
25-Jun-2003	None	None	p. 44-55
30-Jun-2003	p. 18-38	p. 38-62	None
02-Jul-2003	p. 38-52	None	p. 56-71
07-Jul-2003	p. 157-180	p. 63-84	None
09-Jul-2003	p. 181-191	None	p. 287-306
14-Jul-2003	p. 127-138	p. 85-97	None
16-Jul-2003	p. 192-211	None	p. 308-323
21-Jul-2003	None	p. 158-176	None
23-Jul-2003	None	None	p. 324-364
28-Jul-2003	None	None	None

ASSIGNMENT SCHEDULE/DUE DATES

DATE	ASSIGNMENT(S)	E-JOURNAL
09-Jun-2003	None	
11-Jun-2003	None	✓
16-Jun-2003	Autobiography	
18-Jun-2003	FEX Update	✓
23-Jun-2003	Article Review 1	
25-Jun-2003	Revised Autobiography	✓
30-Jun-2003	Lesson Plan 1 Midsemester Exam (In-class)	
02-Jul-2003	FEX Update Article Review 2	✓
07-Jul-2003	None	
09-Jul-2003	Written portion of Group Presentation 1	✓
14-Jul-2003	Lesson Plan 2	
16-Jul-2003	FEX Update	✓
21-Jul-2003	Resource File	
23-Jul-2003	FEX Portfolio, NCTM Standards Report (Graduate Students)	✓
28-Jul-2003	Written portion of Group Presentation 2	
30-Jul-2003	Final Exam (submit take-home portion and complete in-class objective portion)	

**EDCI 4465, SECTION 3, SUMMER
ASSIGNMENT GUIDELINES**

SERVICE LEARNING FIELD-BASED EXPERIENCE

The field experience is an essential component of reflective practice. Observation and participation in classes with high school and middle school students along with experienced mathematics teachers will provide opportunities to view practical methods and strategies addressed in the course. Field assignments will be made to best match your schedules and subject preferences. You are to acquire a minimum of seventeen (17) hours of field experience that must include one-on-one tutoring field experiences with student participants of the LSYou program.

Mission of the Service-Learning Initiative at LSU

The mission of the service-learning initiative at LSU is to promote and facilitate service-learning. At LSU, we define service-learning as...

"A credit-bearing, educational experience in which students participate in an organized service activity that meets identified community needs and reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility."
(Robert Bringle and Julie Hatcher. (1995). A service-learning curriculum for faculty. Michigan Journal of Community Service-Learning. 2(3) 112-122.)

What is Service-Learning?

- Learning by doing
- Applying academic concepts to meet community needs
- Meeting course objectives by serving outside the classroom
- Deepening understanding through reflecting on real life experiences
- Integrating service into the academic curriculum to reinforce learning

Your completed Service Learning contract indicates a sign of your commitment to high teaching standards to those that you tutor. You will find the contract in the course documents folder.

Tutoring:

Week 1: 2 hours
date is July 15, 2003
Week 2: 3 hours
Week 3: 3 hours

Week 4: 2 hours
Week 5: 3 hours
Week 6: 2 hours

NOTE: The last tutoring

NOTES:

1. Ms. Noelle Barbay, an LSYou teacher, will coordinate a tutoring schedule between you and the LSYou students.
2. Mrs. Williams will check tutoring responsibilities daily.
3. You are expected to meet all scheduled tutoring obligations.
4. You MAY NOT use service learning requirements for other courses to satisfy field experience requirements.
5. Dress appropriately/professionally at all times.

Contact information:

LSYou (Office is 118 Hatcher Hall) 578-1751

Director: Dr. Suzan Gaston (sgaston@lsu.edu)

Teachers: Ms. Shannon Ashley shannonashley@cox.net
Ms. Noelle Barbay nbarbay@lsu.edu
Ms. Nicole Smail nsmail1@lsu.edu

Observations:

You are to complete a minimum of 2 teacher observations during the summer. One should be of the LSYou teachers and the other at one of the schools listed below.

You may observe LEAP/GEE remediation classes at the following sites (LAST date is July 2, 2003):

Istrouma High School Ms. Tori Basile, Mr. Kevin Klumpp, Ms. Elizabeth Soullier (8:00-10:30, 10:30-1:00)
355-7701 3730 Winbourne Avenue, Baton Rouge, LA 70805

Central High School To be determined
261-3438 10200 E. Brookside Drive, Baton Rouge LA 70818

E. J. Gay Middle School Mrs. Carol Williams
(225) 687-6845 57955 Saint Louis Road, Plaquemine LA 70764

The following data sources will be required for documentation and reflection:

1. Log of activities indicating date, time, and activity. Obtain teacher's signature verifying work. (verification form available on Semester Book)
2. Description of events. If tutoring, include the grade level of the student and the course they are completing. Also, describe the topics covered.
3. Reflective journal-Keep a journal analyzing each experience. You should have an entry for each tutoring/observation/participation/teaching session.

You will submit the portfolio containing all items on the requested date.

ARTICLE CRITIQUES

Select (2) article journal articles associated with topics that are specifically related to middle/secondary mathematics. Since many internet journals do not have verifiable information (author, publication date, etc.), you need to find the journal at a library (LSU or otherwise). Choose articles dated 1996 or later. Read the article and write a critique which should include a brief (but detailed) summary and your personal reflection that can discuss the importance of the topic in a secondary school mathematics course. You should have four written parts to the assignment:

1. Bibliographic information
2. Article Summary
3. Response to article information
4. Copy of article
5. Be prepared to briefly discuss the article in class on each due date.

Minimum Length (typed, double spaced, 12 point Times New Roman font):

Undergraduate 2 pages

Graduate 3 pages

Sources (others exist)

Mathematics Teacher (NCTM)

Mathematics Teaching in the Middle Schools (NCTM)

Journal for Research in Mathematics Education (NCTM)

School Science and Mathematics

THE (Technical Horizons in Education) Journal

NCTM Yearbooks

AUTOBIOGRAPHY/CURRICULUM VITA

In preparation for the initial contact with Clinical Adjunct Faculty or Supervising Teacher, the preservice teacher should complete a biographical sketch/curriculum vitae that reflects the educational and work experiences you have had. A portion of your curriculum vita should include and organized account of your education, employment (academic and other), professional affiliations, interest, and community efforts. Your curriculum vita should be in a format suitable for use in a job application. Be sure to include dates and details for all experiences. Please type this assignment using 12 point Times New Roman font.

As a preparation for interviews, please respond to the following questions at the end of your autobiography:

1. What is your teaching philosophy?
2. What is your mathematical teaching philosophy?
3. What are your expectations of classroom students?
4. What personal and professional qualities do you have that will enhance your success as a teacher?

You will submit a revision of your autobiography two weeks after the initial submission..

NCTM STANDARDS REPORT (GRADUATE STUDENT ASSIGNMENT)

Background for the development and direction of a mathematics curriculum can be found in the NCTM Principles and Standards document. Write a critique based upon your reflections of the document through reading assignments and class discussions. Your critique should address the following questions or issues:

A response to why the document was developed

Reactions to implications for classroom teachers and students

Relevance to your experience as a student in mathematics

Your place, as a future educator, in the development of revisions of this document

Direction you may take with the contents of this document

Support your response with reference to at least one of the six teaching principles, one of the five content standards (grades 6-8 or 9-12), and one of the process standards (grades 6-8 or 9 - 12). Also, relate the Louisiana State Framework Benchmarks and Standards to those in the NCTM Principles and Standards.

Continue your paper with a brief discussion and analysis of the place and direction for evaluation in relation to the implementation of the NCTM Principles and Standards.

Minimum Length is four pages (typed, double spaced, 12 point Times New Roman font):

PRESENTATIONS
MANIPULATIVE, CBL, CBR, GRAPHING CALCULATOR and/or COMPUTER

Two presentations are required. The first will be a graphing calculator/CBL2/CBR lesson and the second will have a choice of a manipulative (commercial or with a teacher-made manipulative (prior approval form instructor necessary) or computer software activity. For each, you will participate in a group of 2-3 students, select a mathematical topic addressed in a high school curriculum and present to the class addressing the selected topic. You may adapt ideas from the NCTM Standards, Teaching Secondary Mathematics (TSM) text, or other activity resources. The activity should be one that class members can participate in individually or in small groups, acting as high school mathematics students. Be sure to read background material from TSM, UbD, and NCTM Standards addressing your chosen mathematics topic.

You must submit a written portion of the assignment on the night of your presentation which includes the following:

Subject (Algebra I, Geometry, Algebra II, Precalculus, Discrete, etc.)

Mathematics topic

Outline of lesson activity

Procedure (lesson instructions)

Also, include appropriate handouts and directions for each participant or group to be included in their resource file regarding the purpose, cost, and guidelines for the manipulative used. Complete a similar item for the CBL, CBR, or graphing calculator activity.

Each person will have specific portions of the assignment.

After your presentation submit a reflection on this experience via a Semester Book Online Assessment.

Discuss what you learned as a student and as a perspective teacher. How do you feel manipulatives (CBL, CBR, or graphing calculator) fit into the high school mathematics curriculum? How will you, as a teacher of high school mathematics, address the issue of manipulatives (CBL, CBR, or graphing calculator)? What do you see as pros/cons or strengths/weaknesses of using manipulatives (CBL, CBR, or graphing calculator)?

This paper is a Semester Book online assessment.

RESOURCE FILE

Create a Teacher Resource File to contain your personal collection of materials and other resources. The file should be housed, labeled, and organized in such a way as to be conducive to future additions. The file must contain, but is not limited, to the following:

(SPECIAL NOTE: At least 3 items must be from the internet.)

1. Three (3) current catalogs from educational materials suppliers
2. Two (2) newspaper activities including the actual new article
3. Three (3) sample journal activities
4. One (1) teacher-made manipulative together with instructions and materials for 3 lessons that can be taught using them.
5. One (1) bulletin board sketch
6. Three (3) graphing calculator activities
7. All activities presented in class both by cohort or instructor (technology, lesson plans, articles, problems, manipulatives)
8. Five (5) non-routine problems on a variety of topics
9. One (1) whole-class or large group game for reviewing
10. Two (2) sample performance assessment activities with scoring rubric

JOURNAL WRITINGS

Throughout the course on a weekly basis written reflections addressing readings from the text and/or class discussions will be assigned. You will find an online assessment on Semester Book. You will respond to the questions/topics posed. You must respond by Saturday of each week since responses are not allowed after that date.

ATTENDANCE AND PARTICIPATION

Class preparation, discussion and participation are essential components of your experience in teaching and learning mathematics. Attendance is mandatory as discussion and idea sharing cannot be duplicated by copying notes from a fellow classmate. Please notify the instructor PRIOR to class if you are unable to attend class for any reason (Phone number and e-mail on page1). You will complete a class assignment as indicated on the schedule. These assignments may not be made up.

CLASS ACTIVITY SCHEDULE

DATE	CLASS ACTIVITY
09-Jun-2003	Class expectation discussion, Introductions Viewing of NCTM 2003 Annual Meeting Opening Session presentation by Dr. Judith Ramaley
11-Jun-2003	Introduction to the use of graphing calculators and manipulatives in middle and high school mathematics classes.
16-Jun-2003	Graphing calculator/CBL2/CBR Activities
18-Jun-2003	Manipulative activities
23-Jun-2003	Article Review 1 presentations Graphing calculator/CBL2/CBR Activities
25-Jun-2003	Manipulative activities Computer activities
30-Jun-2003	Midsemester Exam (in-class)
02-Jul-2003	Article Review 2 presentations Graphing calculator/CBL2/CBR Activities
07-Jul-2003	Group Presentations (graphing calculator/CBL2/CBR)
09-Jul-2003	Group Presentations (graphing calculator/CBL2/CBR)
14-Jul-2003	Manipulative activities Computer activities
16-Jul-2003	Graphing calculator/CBL2/CBR Activities
21-Jul-2003	Manipulative activities Computer activities
23-Jul-2003	Group Presentations (manipulative or computer)
28-Jul-2003	Group Presentations (manipulative or computer)
30-Jul-2003	Final Exam: submit take-home portion and complete in-class objective portion

NOTE: Each class will include:

1. Discussion of the assigned reading.
2. Completion of a class assignment.

